# How can traditional and complementary medicines be integrated into health care in Saudi Arabia?

## The perspectives of health professionals and policymakers

By

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Abstract

Background and rationale

The regulation and integration of complementary and alternative medicine (CAM) with orthodox medicine is rapidly gaining interest in medical and policy circles. However, the empirical investigation of CAM is yet to match the growing interest in the field, with a dearth of reliable research on the integration of CAM into national health care systems, particularly within the Middle East and North Africa (MENA) region. Numerous studies of CAM have focused on evidence-based practice and the general effectiveness of specific therapies rather than the prevalence of CAM use (Tovey & Adams, 2003).

Aims

This study sought to fill this gap in the literature, from the perspective that framing CAM in opposition to orthodox medicine is ultimately problematic and that these types of medicine cannot be mutually exclusive. The exponential growth of CAM use in Saudi Arabia may have created a political need to regulate its practice, particularly regarding integration with orthodox medicine, a lack of evidence exists with respect to the prevalence and nature of CAM practice in the nation. With that in mind, this study was designed to assess CAM practice within the Saudi Arabian health care system from the perspective of physicians, hospital managers and policymakers in the Ministry of Health. The study also aimed to align health care regulations for CAM practice in Saudi Arabia with the World Health Organization's (2012) guidelines concerning safety, effectiveness and quality of CAM.

Methods

This thesis used a mixed-methods design to investigate doctor and stakeholder perceptions of CAM integration into the health care system of Saudi Arabia and how it

relates to policy and culture. In the first phase, a questionnaire was distributed to randomly selected hospitals and primary health care centres (PHCs) in both rural and urban areas in selected regions. The questionnaire investigated physician knowledge and perception of CAM's safety, effectiveness and quality. Results indicated a continuous and substantial progression towards integration of CAM in Saudi Arabia. A sizeable percentage of participants believed that CAM is more effective than Islamic medicine (IM).

The second phase of the study involved interviewing 30 physicians about their attitudes toward CAM to identify their preferences, rationale and feelings toward integration. Most interviewees supported integration with the view that it could improve safety, but many doubted the efficacy of CAM practices.

In the third phase of the study, five hospital administrators and stakeholders participated in semi-structured interviews aimed at identifying and understanding the efforts undertaken in integrating CAM in the Saudi health care system.

Results

All interviewees thought CAM integration was a desirable goal, but that the lack of evidence-based research, support and training for physicians could slow the process. Considerable efforts are still required to fully integrate CAM in the Saudi health care system, despite the numerous published data showing that CAM is extensively used in the country. The use of CAM is common among clerics rather than physicians; examples of CAM practices in Saudi Arabia and other Islamic and Arab countries include honeybee products, herbs, prayer and wet cupping. Most of these practices are termed 'prophetic medicines'.

Conclusion

With more physicians and patients embracing CAM, it is only prudent that the best evidence is employed to pre-empt conflict arising from its adoption. This study augments and adds more depth to the currently available literature on CAM practice in Saudi Arabia.

Keywords:

- Complementary and alternative medicine
- Traditional medicine
- Islamic medicine
- Physician perspectives
- Stakeholder perspectives
- Integration
- Saudi Arabia

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1.1. The context of the study

The forces of globalisation, specifically the increasing fluidity of movement of goods, services, information, ideas and people, have promoted rapid sharing of research in the health care field (Kruk et al., 2016). One area of interest in global health care systems is the regulation and integration of complementary and alternative medicine (CAM) with orthodox medicine. CAM is defined as a "diagnosis, treatment and/or prevention which complements mainstream medicine by contributing to a common whole, by satisfying a demand not met by orthodoxy or by diversifying the conceptual frameworks of medicine" (Ernst et al., 1995, p. 506).

The empirical investigation of CAM has not yet matched the growing interest in the field, with a dearth of reliable research on the integration of CAM into national health care systems. Integration has occurred in a small number of countries such as China and Japan (World Health Organization [WHO], 2001), but none in the Middle East and North Africa (MENA) region. Moreover, the bulk of research that has been conducted on CAM has focused on evidence-based practice and the general effectiveness of specific therapies, rather than the prevalence of CAM use (Tovey & Adams, 2003).

This study is grounded in the assumption that framing CAM in opposition to orthodox medicine is ultimately problematic, and that neither type of medicine can be isolated from the other. The WHO has developed a number of strategies relating to the integration of CAM into health systems (WHO, 2002; WHO, 2014), and suggests that nations meaningfully explore how best this can be done (WHO, 2012).

The government of Saudi Arabia covers almost all health care costs; however, it will not pay for CAM therapies. Nevertheless, most Saudis have used CAM at some time, which is a

testament to its prevalence in the country. For example, Elolemy and AlBedah's (2012) study of the prevalence of CAM use in Riyadh revealed that 85% of the city's residents had sought CAM treatment. A more recent study by Kazmi et al. (2018) in the Majmaah region discovered that 66.3% of the region's residents had used CAM, with herbal remedies being the most common. In a systematic review of regional surveys on prevalence of traditional medicine (TM) in Saudi Arabia, Alrowais and Alyousefi (2017) revealed that the overall prevalence of CAM use ranged between 60% and 75% in Saudi Arabia. There is consequently a strong movement in the political sphere to regulate CAM practice, particularly with respect to its integration with orthodox medicine, hence the establishment of the National Centre for Complementary and Alternative Medicine (NCCAM) in 2008. Nonetheless, a lack of evidence exists on the nature of CAM practice in the nation.

This study's principal aim was to identify and explore the perceptions of stakeholders in the Saudi Arabian health care system – including physicians, hospital managers and policymakers in the Ministry of Health (MOH) – of CAM use and its integration into orthodox medicine.

Saudi Arabia is a member state of the WHO and consequently charged to meet established organisational goals according to the country cooperation strategy. By extension, this study was particularly concerned with WHO guidelines concerning CAM safety, effectiveness and quality, and the alignment between WHO policy and CAM practice in Saudi Arabia (WHO, 2014; 2002).

## 1.2. Alma-Ata Declaration and traditional medicine

In 1978, the WHO and the United Nations International Children's Emergency Fund (UNICEF) advocated fervently for the Alma-Ata Declaration, which highlighted the need for universal access to health care globally (WHO, 1978). The use of TM and CAM was seen as

an important element in meeting health care needs, particularly in developing countries (Bichmann, 1979; Cueto, 2004). WHO (2012) recognised that "the Alma-Ata Declaration was significant for traditional medicine". Rapid political, economic and social changes during the 1980s, however, diverted focus from the Alma-Ata goals in developing nations, thereby undermining the previously established commitment to the declaration (White, 2006). A renewed interest in the principles of Alma-Ata in 2008 reconfirmed the role of CAM and TM (Brown, Fee, & Stepanova, 2016).

Although TM could have been used for thousands of years and made great contributions to human health, the Alma-Ata Declaration may be the first recognition of its role and practitioners in primary health care by the WHO and its member states (WHO, 2014). The WHO contends that the core components of TM that render it an integral part of the emerging global health infrastructure are relative to its overall effectiveness, as determined by affordability, availability and accessibility (WHO, 2014). By aligning the principles of the Alma-Ata Declaration and universal health care to the values of CAM and TM, Saudi Arabia can potentially improve health outcomes and care for its citizens (WHO, 2017).

In relation to one of the key objectives of universal health care, integration of CAM with orthodox medicine may help improve the quality of health services provided to Saudi residents. Furthermore, CAM and TM can enhance equitable access to needed health services for all Saudi residents, including those who have been unable to access orthodox medicine due to poverty or lack of health insurance. Adoption of CAM and TM can also mitigate the financial costs of orthodox medicine. This is in line with the third objective of universal health care, which is to protect people from the financial risks that occur when seeking medical services. This study is based on the premise that more people are likely to embrace

CAM if medical professionals develop positive attitudes toward its application alongside orthodox medicine.

The WHO (2014) distinguishes between CAM and TM only insofar as to acknowledge that developed nations often frame CAM as TM, while developing nations integrate TM into primary health care. It suggests calling these assorted practices traditional and complementary medicine (CAM/TM).

The WHO Congress on Traditional Medicine comprised representatives from over seventy member states seeking to explore technical topics and support ways to embed CAM/TM into various health care systems (WHO, 2014). Despite Saudi Arabia's presence at the Congress, the Saudi government does not provide the bulk of CAM therapies; in conjunction with the mounting interest in CAM/TM, this has resulted in a 40% increase in out-of-pocket costs to the Saudi public (Albedah et al., 2013). Islamic medicine (IM) is regularly used in Saudi Arabia due to the high Muslim population, and many therapies under this category can be framed as CAM/TM. IM is described in subsequent sections as generally holistic in nature, and not only focuses on the physical dimensions of disease and health, but also on the spiritual, emotional and mental attributes of medicine. Interestingly, cancer is a condition for which CAM/TM is popular in Saudi Arabia (Jazieh et al., 2012).

Qureshi (2010) highlights that Oman, Saudi Arabia and Bahrain have all recently begun implementation of frameworks that would politically facilitate greater integration of CAM/TM into mainstream health care. However, he states these initiatives are not likely to come to fruition in genuinely promoting state support of CAM/TM, due to gaps between policy and practice that are in many ways attributable to minimal empirical evidence.

The rationale for this study, by extension, was rooted in the need to articulate the realities of CAM use in Saudi Arabia and provide an opportunity for health care practitioners

to voice their opinion on the situation. One question of interest was the degree of integration of CAM into Saudi health care as it relates to the cultural and political environment, and how this may be different from other environments previously studied.

## 1.3. Justification of the study

The WHO has now developed a second Traditional and Complementary Medicine Strategy (2014), with a dual aim to harness “the potential contribution of TM to health, wellness and people-centered health care” and promote “the safe and effective use of TM by regulating, researching and integrating TM products, practitioners and practice into health systems, where appropriate” (WHO, 2014, p. 11). Although Saudi Arabia is committed to complying with these goals of integrating CAM with orthodox medicine, very little research has been done to determine the nature or extent of progress.

Some CAM therapies are consistent with IM through the diversification of conceptual frameworks; they share a common ground of medical anthropology integrating cultural and social therapies that primarily focus on religion, symbolism, diseases, patients, healing and practitioners (Hess, 2002). For instance, Hijama (wet cupping), which is a procedural process in IM, may be regarded as a preventive, treatment or diagnostic measure that is consistent with the definitions of CAM therapies (Al-Rukban et al., 2012).

The Saudi government is not providing sufficient legal, financial, educational and constitutional frameworks to enable successful integration and implementation of these therapies. As a result, the growing number of Saudi citizens who opt to employ these methods incur increasing out-of-pocket expenses (Hess, 2002). It is important to determine whether there are barriers to meeting the WHO's (2014) goals of CAM integration and, if so, how they relate to culture, geographic location or religious practices among Saudi citizens, physicians and hospital policymakers.

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This research explores the degree and nature of barriers with reference to the recent 2014–2023 strategy that was designed to reaffirm the significance of integration (WHO, 2014). It adds to the sparse literature on the subject in the MENA region and, more specifically, in Saudi Arabia. By investigating the opinions and attitudes of medical practitioners in both rural and urban areas, the research provides not just information on the extent to which CAM is being integrated, but also where it is being integrated and the degree to which the WHO 2014 guidelines are meeting with acceptance or resistance among the biomedical community.

1.4. Study aims and objectives

The aim of this research was to examine ways to integrate CAM into the mainstream health system of Saudi Arabia. The research objectives for this study were two-fold:

1. Identify the current level of CAM being practised in the Saudi health system by means of an exhaustive review of existing literature and surveys.
2. Determine the level of interest in integrating CAM among health care providers in Saudi Arabia and clearly identify the preferences, rationale, feelings towards and beliefs about CAM/TM that may influence the integration of CAM in Saudi Arabia.

To meet these objectives, the following research questions were set:

1. What is the current level of use of CAM in Saudi Arabia?
2. What are health professionals' current perceptions of CAM/TM in Saudi Arabia?
3. What efforts are planned or currently underway that may contribute to a more thorough integration of holistic health care in Saudi Arabia?

## 1.5. Theoretical framework

When defining CAM/TM, articulating how orthodox or modern medicine has evolved since the late nineteenth century is critical. Modern medicine was heavily influenced by rational laws, Newtonian physics and Cartesian philosophy; all of these schools of thought highlighted that the human body was mechanistic, readily reduced to a sum of interrelated parts that functioned both separately and collectively, and fundamentally fallible due to disease (McGrady, 2000).

This scientific framework is reductionist, viewing illness as the result of outside invaders and traumas best treated in a distant and detached manner. Although this approach can be effective for conditions with single causes, it is not always as successful for complex conditions such as chronic pain, arthritis, allergies, asthma, cancer, hypertension, depression and digestive disorders (Roy, 2010). The reductionistic 'man as machine' approach does not take into account the holistic person – the emotions, the spirit, the mind and the environment, and how they all interplay to create health and wellbeing (Ahn, Tewari, Poon, & Phillips, 2006). This limitation of allopathic medicine can be ameliorated by the use of CAM, and the integration of orthodox and CAM arguably has the potential to yield the greatest individual health and wellness (Lavalley & Verhoef, 1995).

Articulating a comprehensive definition of CAM/TM may be more difficult than defining allopathic medicine, as it encompasses a wide spectrum of therapies (Dacher, 2006). CAM/TM treatments are generally holistic in nature, focusing on not only the physical attributes of health and disease, but also on the mental, emotional and spiritual dimensions of medicine. The WHO (2012, p.1) defines TM as follows:

"Traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable

or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness."

The WHO (2012) highlights further that CAM is usually used interchangeably with TM in most nations, referring to a broad set of practices in the realm of health care that are neither part of the dominant health care system nor integrated into the nation's own tradition. Herbal medicine, including preparations containing active ingredients from plants, therapeutic techniques such as energy therapies or other mind-body treatments, are all considered CAM (WHO, 2008). A firm definition for CAM/TM is integral to all empirical research, as it harmonises the use of CAM/TM terminology and facilitates the development of applicable methodologies for studying the effectiveness of these treatments (WHO, 2012). However, the cultural nature of CAM precludes a universal definition, which prompts the use of broad categories such as those within the context of this present study (WHO, 2017).

The WHO is working closely with the NCCAM in Saudi Arabia to develop a model for assessing CAM (Al-Mutair, Plummer, & Clerehan, 2014). The NCCAM recognises a range of CAM therapies. The treatment categories falling under this umbrella and investigated in this study are energy therapies, spiritual therapies, manipulative body therapies and mind-body therapies (Dacher, 2006). While the WHO (2012) recognises the role of herbal therapies as an integral part of CAM, this category was excluded from the study due to the strict laws governing food, vitamins and herbal medicines in Saudi Arabia. Energy therapies can be framed as biofield therapies such as qigong, reiki, and therapeutic touch or bio-electromagnetic therapies such as alternating current or direct current therapies (National Centre for Complementary and Integrative Health [NCCIH], 2016). Manipulative body therapies are based on body manipulation, including chiropractic and osteopathic manipulation. Mind-body interventions are those which are specifically designed to affect and enhance the mind's relationship with the body through art, music and dance (NCCIH,

2016). Finally, spiritual therapies include those which are grounded in religious beliefs, such as Hijama and Ruqya (NCCIH, 2016), which are also commonly referred to as IM.

Little research exists on the use of CAM/TM in Saudi Arabia. In 2001, the WHO conducted a global study of CAM/TM use in member states, with particular attention to the Persian Gulf region. They noted that CAM/TM in the nation was primarily based on spiritual therapies and herbal remedies, and their use was widespread. They found that orthodox medicine had become increasingly widespread since 1940, when health authorities began building health infrastructure. Systematic resistance from religious policymakers to CAM/TM occurred until the 1990s, when Saudi Arabians demanded greater access and the government reduced restrictions on these treatments. The WHO (2001) found that the most popular forms of TM in Saudi Arabia were based on spiritual healing and herbal remedies, including acupuncture, homeopathy and health food products.

Regulation of CAM/TM is covered by the 1978 Royal Decree M/18, specifically articles 44 and 50. Under these two articles, all local or imported medical products, including CAM/TM, should be registered with the MOH before they can be used as treatment methods (WHO, 2001). Paragraph 13A of this decree, amended via Ministerial Resolution 1214/20, also requires all medicines and products with medicinal properties to be registered with the Ministry. For purposes of safety and efficacy, the License Committee of the MOH is responsible for regulating the advertising and use of herbal medicines and other related products, such as food and cosmetic products. Those eligible to practice acupuncture must have at least 200 hours of training in addition to meeting stringent hygiene standards, and should be rheumatologists, anaesthetists or orthopaedists. These standards also apply to chiropractors, who must undergo formal training before they can be allowed to practice.

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CAM can be combined with orthodox medicine to achieve a more integrated approach in the burgeoning field of integrative medicine (Dacher, 2006). Hollenberg and Muzzin (2010) noted, however, that there are profound ideological barriers to developing a true integrative approach. Orthodox medicine presently tends to hold CAM/TM knowledge and practices in relatively low esteem (Hollenberg and Muzzin, 2010).

Part of the issue with CAM and its integral role in a new standard for health care systems for Saudi Arabia may be related to cultural norms as defined by religious laws and frameworks. Weir (2005) surmised that even in the western context, the definition of CAM could be legally elusive, confusing and difficult to pinpoint. Legally speaking, any method of treatment seen as outside the realm of orthodox medicine can be seen as CAM. Ernest, Cohen and Stone (2004) further suggested that the acceptance of CAM has been difficult even in European health care systems because the holistic approach is not amenable to measurement. Efficacy of treatments and regulation are both key to the TM strategy developed initially by the WHO in 2002 and updated more recently (WHO, 2014).

Rigby, Hill, Koch and Keeling (2011) suggested the social element of health care may increasingly contribute to the integration of different treatments and options, but for this to take place, the patient must have an adequate voice in the matter. They suggested that in some systems these voices are not heard, but rather ignored to create health care systems that are dominated by medical knowledge and decision-making. Kleinman (1980, p.58) stated that "health professionals usually are insensitive to the views of clinical reality held by other healers, and to the expectations and beliefs of their patients". Therefore, it is important to research the views of health professionals as they will affect the cultural context in which patients make decisions.

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As a prospective health care professional, my ambition is to contribute to equitable access to health care for Saudi citizens. In light of the challenges that the health sector has been facing in meeting demands, the central government has instituted ambitious plans to increase private sector involvement in health care provision. Additionally, the government hopes to reduce out-of-pocket expenses for patients (Khalil et al., 2018). It is important to understand the evidence-based lifestyle and therapeutic approaches, including CAM/TM.

This study contributes to knowledge by identifying the opportunities and benefits that will be realised by integrating CAM/TM into the Saudi health care system. The study also identifies the human resource challenges of integrating CAM/TM, by providing a clear picture of the readiness (or lack thereof) of health care professionals in embracing the use of these traditional health care methods.

1.6. Structure of the study

This thesis explores physician and policymaker influence on integrating CAM/TM into the health system in Saudi Arabia. It addresses key guidelines for CAM integration and the role of medical practitioners in changing attitudes to integration. Throughout this thesis a number of questions resound: how can CAM be integrated? How can medical doctors' attitudes towards CAM affect integration? How do policymakers contribute to integration? Therefore, this thesis not only seeks to understand the current nature of CAM in Saudi Arabia, but also explores barriers towards integration.

Chapter Two provides a critical review of the literature. The chapter begins with examining our understanding of CAM, exploring dilemmas associated with defining CAM practices, and a history of the health system and holistic health care in Saudi Arabia. It also provides a brief historical background of IM and the most common practices in the region,

before moving on to discuss developed countries' history and experiences of CAM integration.

Chapter Three explores a mixed-method research, the methodology and the design of tools to collect data. The chapter discusses research gaps and how to address them. It explores in detail the ethics, sampling, recruitment and implementation of the three distinct phases of the research. It involved a large-scale survey with physicians to explore demographics, knowledge, perception, practice and workplace factors pertaining to CAM among physicians.

Chapter Four presents the main findings of the survey, while Chapter Five analyses interviews with a subgroup of the physicians to gain further insight into the results of the quantitative data. Interviews with stakeholders in the MOH are discussed in Chapter Six to gain a better understanding from their perspective of the barriers and obstacles to CAM integration. The final two chapters include a discussion, conclusion and recommendations drawn from the research analysis.

Chapter 2: Literature Review

Chapter Two: Literature Review

*Background of the chapter*

This chapter is a literature review of past studies, both local and international, that have focused on the prevalence of CAM/TM in various countries and their integration (or lack thereof) into mainstream health care systems. The chapter begins with an overview of the Saudi health care system and the place of CAM/TM in it. It then delves into the use of CAM/TM in Saudi Arabia by highlighting and reviewing past studies, before addressing the issues surrounding the integration of CAM/TM with orthodox medicine. Also analysed in this chapter are models of health care systems, in which the researcher focuses on health care systems as cultural systems, and maps out Saudi Arabia's health care system within the context of Kleinman's health care model.

*The literature review process*

Various literature on the subject was leveraged on qualitative studies of perceptions of and beliefs about CAM/TM, and specific key search terms were used for searching. The keywords and their truncated variants included 'complementary and alternative medicine', 'traditional medicine', 'Islamic medicine', 'physicians' perspectives', 'stakeholder perspectives', 'integration' and 'Saudi Arabia'.

*Databases*

The key search terms were employed in a wide range of databases, comprising the Cochrane database, Google Scholar, PsycINFO, PubMed and Scopus. A number of articles were identified and citations extracted. Articles were further filtered using inclusion and exclusion of search terminology, such as 'traditional health beliefs', 'TM perception',

'qualitative studies', 'qualitative methodology', 'thematic/content analysis' and 'contemporary alternative medicine'.

*Inclusion criteria*

A large proportion of the qualitative studies included were from the year 2000 or later, with a focus on concepts such as traditional health beliefs, attitudes and perceptions, causes and aetiological factors, descriptions of TM, and perceived stereotypical beliefs. Most of these studies were based on mixed methodology.

*Exclusion criteria*

Since the current study focused on research exploring the beliefs and perceptions of health care professionals regarding the use of TM in treating a variety of health issues, studies that employed ethnography and grounded theory methodology were excluded to enhance specificity.

*Procedure and synthesis of themes*

Keyword identification was performed, and a systematic article search conducted using various databases. Data extraction used this systematic search, and the articles that were identified underwent further screening for inclusion or exclusion based on the described criteria. Thematic data were also extracted from numerous studies, and synthesised and further transformed into categories of related concepts.

*Quality appraisal*

Quality appraisal was conducted to guarantee the highest level of consistency and precision between the primary data and the authors' interpretations. The quality appraisal included sufficiency and aptness of the research design to the focal research question. In addition, the study explored the suitability of the material in presenting primary data with

regard to analysis, as well as including a methodical, well-documented data collection formula.

*Ethics*

The researcher adhered to specific ethical requirements in upholding the moral rights of participants and authors whose studies were cited, by avoiding misrepresentation of findings and any intentional data falsification or manipulation.

*The Saudi health care system and the place of CAM/TM*

Health care services in Saudi Arabia are increasingly receiving high-priority attention from the government. This is ostensibly aligned with the WHO Alma-Ata Declaration and the need to attain universal health coverage (UHC). UHC is a product of the 1948 constitution of the WHO, which identified health as a fundamental human right. The WHO (2019) describes UHC as an integral part of sustainable development goals, as it ensures a better world through equitable access to health and protection for even the poorest people. This vision can be realised through access to preventive, palliative, promotive and curative health services of sufficient quality for all people around the world. Furthermore, a cornerstone of the UHC agenda is that the aforementioned health services must be affordable to all.

In recent decades, the quality and quantity of health services in Saudi Arabia have been improving exponentially. Gallagher (2002) opined that despite a number of countries in the Middle East seeing substantial advancement in their health care systems, Saudi Arabia has achieved more on a broad national scale.

Saudi Arabia has made a relatively high level of care available to almost every segment of the populace (Gallagher, 2002). The government provides complete access to its public health care services to its citizens. Gallagher (2002) neglected to investigate

whether this extends to CAM/TM, but noted that the MOH is responsible for monitoring health services in the private sector in an attempt to achieve the government's health objectives. It is therefore unclear whether the need to achieve primary health care conflates with alternative or traditional medicine, making the need for integration more challenging than before.

## 2.1. CAM use in the Middle East region

Although approaches such as homeopathy are widely used in the Middle East and in Saudi Arabia in particular, many users of CAM/TM also use orthodox medicine (Al Moamary, 2008; Clark, Fitzgerald, & Almalki, 2011). The use of CAM and orthodox medicine simultaneously, even without doctors' advice, is indicative of patients' belief in the efficacy of integrated treatment approaches (Clark, Fitzgerald, & Almalki, 2011).

Muttappallymyalil et al. (2013) studied CAM use among consumers in the United Arab Emirates (UAE). The study involved 135 patients aged above 18 years who were interviewed using an open-ended structured questionnaire. The questionnaire sought to identify participants' sociodemographic information, use of CAM, family history in terms of using CAM, reason for using or not using CAM, and opinions on the effectiveness of CAM. The sociodemographic information collected included gender, education, age and nationality. The study concluded that about one third of those seeking orthodox medicine also used CAM, and mostly without physician advice. The most common CAM approach used was homeopathy. While 28.2% of participants used CAM following a physician's advice, the rest used CAM based on nonmedical information. A large majority of up to 71.8% said CAM delivered good outcomes for them and their family, but just 10% recommended it to their peers or colleagues. Only 18% of users believed that CAM was an evidence-based treatment approach, while 75% were unsure. The most common reason for CAM use was good

previous outcomes and fewer complications, while non-use was attributed to lack of knowledge, and others said they did not feel the need for this type of medicine. The researchers concluded that a large majority of the participants did not require medical information to use CAM, but used orthodox medicine alongside CAM. This conclusion has significant implications as it affirms the need to consider patients' clinical history when encouraging the use of CAM both at the individual and policy level (Al-Mutair et al., 2014).

Factors such as age, education and gender have been found to influence people's choice to use CAM (Ross, 2009; Singer & Adams, 2014; Boon, Verhoef, Vanderheyden, & Westlake, 2006). In their study on the use of CAM among middle-aged Arab women in Qatar, Gerber et al. (2014) found that participants' use of CAM was influenced by the low cost of these treatments compared to conventional treatments, availability/accessibility and the perceived effectiveness. The mixed-method study, which included 841 women, found that CAM use was prevalent among women with higher educational status with up to 55.1% of CAM users being professionals and university graduates (Gerber et al., 2014). Overall, the study highlighted poor perception about the efficaciousness of CAM treatment among the public.

The findings by Gerber et al (2014) are in line with those of Ghazeeri, Awwad, Alameddine, Younes and Naja (2012), whose study highlighted the need to integrate CAM approaches into the training of health care professionals and to educate patients on the effective and safe use of CAM treatments. Ghazeeri et al. (2012) conducted a cross-sectional survey and conducted interviews with 213 patients seeking services at the assisted reproductive unit of one of the largest academic medical institutions in Beirut, Lebanon. The questionnaire collected information pertaining to patients' demographic characteristics, infertility issues and use of CAM. Results indicated that factors such as education level, household income and gender influenced CAM use, with people of higher educational status

and higher income reporting greater use of CAM. Women used CAM therapies more than their male counterparts did. More importantly, close to half of the participants sought advice about CAM from their peers, while only 13% told their physicians about their use of CAM.

In other studies of the determinants of CAM use, Al Moamary (2008) found that older patients and those with long-term chronic diseases reported higher use of so-called unconventional treatments, such as the use of blackseed, cautery, herbs and recitation of the Holy Quran. Khalil et al. (2018) described IM as a collection of healing therapies that are practised within the sphere of Islamic influences or teachings. It differs from prophetic medicine in that it is open to practices that do not contravene Islamic religion, whereas prophetic medicine is restricted to the teachings of the prophet of Islam.

A cross-sectional study of asthma patients at the King Abdulaziz Medical City in Riyadh, Saudi Arabia, concluded that more government involvement in terms of research was necessary to evaluate the use of CAM in the country, a proposition also made in other studies (Al Moamary, 2008; Al-Arifi & Al-Omar, 2011).

Research has found that knowledge of CAM is limited even among health care students and practising professionals (Alamri et al., 2016; Al-Dalee & Aljubran, 2012; Alzahrani, Bashawri, Salawati, & Bakarman, 2016). Al-Arifi & Al-Omar (2011) in their study of pharmacy students at King Saud University found that knowledge of CAM therapies was limited, with lectures the main source of information. Interestingly, over half of the respondents (52.6%) believed that the use of CAM would have negative implications for the health of the public.

Elsewhere, Alamri et al. (2016) in their cross-sectional study on CAM knowledge, attitude and practice among medical students in Al-Imam Muhammed Ibn Saud University found that although attitudes to CAM were generally positive, over half of the respondents

(161) had no previous exposure to CAM education in college. The majority knew about CAM through family and friends, further underscoring the importance of CAM education for the successful integration of CAM with orthodox medical approaches (Gerber et al., 2014; Ross, 2009; Singer & Adams, 2014).

A common theme emerging from studies evaluating the use or perception of CAM in Saudi Arabia is the issue of non-disclosure of CAM use to medical practitioners. For instance, Al-Faris (2017) in a study of CAM among patients attending health centres in a military community in Riyadh found that 72% of participants would not tell their doctor about their use of CAM. This was in spite of the CAM they used proving to be effective in alleviating symptoms or curing an ailment completely. Elsewhere, Musaiger and Abahussain (2014) investigated the attitudes toward and use of CAM among adolescents in Al Khobar city in Saudi Arabia. Study findings revealed that although 21–43% of adolescents viewed CAM in a positive light and had used various modalities, up to 52% of the study participants would not reveal their use of CAM to their doctor or any other health care practitioner in a hospital setting.

In studying the pattern of use of CAM among cancer patients in Saudi Arabia, Al-Dalee & Aljubran (2012) found that 92% of adult cancer patients interviewed at the King Faisal Cancer centre found CAM to be effective in alleviating cancer symptoms. However, just 12% of these patients, who were using both CAM/TM and orthodox medicine, said they would disclose their use of IM therapies such as honey and herbs, recitation of prayers and attendance of spiritual sessions to their physician.

Robinson & McGrail (2004) in their review of qualitative and quantitative studies suggested several reasons why patients who use CAM may fail to disclose this use to their physician. Patients may be fearful of their physician's reaction, believe that their physician

does need not know about their use of CAM therapies, or fail to disclose their CAM use because their physician did not ask about it (Hess, 2002). The effective provision of holistic care by health care practitioners requires a comprehensive assessment of a patient's clinical history, including their use of CAM (Cruz, Alshammari, & Colet, 2016). To provide evidence-based knowledge to patients, health care professionals need to be aware of patients' use of treatment modalities other than orthodox medicine (Ahgren, 2012; Robinson & McGrail, 2004).

## 2.2. The use of CAM in Saudi Arabia

Studies have revealed that while a wide variety of forms of TM have proven safety and efficacy records, others have proven to be ineffectual and potentially hazardous. The potential risks and inefficacies may fuel negative perceptions of CAM among medical professionals. While many studies have documented the use of TM for chronic diseases in Saudi Arabia, little English language literature exists on the stigma associated with it among physicians. This study sought to address the gap by investigating physician perceptions of CAM/TM. By extension, the attitudes of patients were also examined, as they may reflect cultural beliefs that may impact how physicians view the practices.

A survey by Mohammad (2015) is isolated in having explored TM in adults with neurological disorders in Saudi Arabia, including prevalence, perceptions, triggers and patterns of TM use. Written in Arabic, the study barely touched on difficulties linked to the use of CAM. However, it provided significant insight into the various techniques employed, and recommended the adoption of specific measures and policies for the appropriate use of CAM/TM in Saudi society.

In terms of mental health in Saudi Arabia, various studies are available, including Alyousef (2016), which delved into stigma linked to psychiatric conditions. The study

fleetingly mentioned the use of CAM/TM as an intervention method by medical practitioners. It discussed the spiritual association with mental disorders, and treatment by spiritual or homeopathic healers. As Alyousef rightly noted, there seems to be a lack of scientific research aimed at defining the stigma of mental health problems in Saudi Arabia and other Arab states. The use of TM in neurological and psychological disorders is consequently neglected, thus the need for this study. This phenomenon, and in particular its connection to the stigma associated with seeking traditional interventions, is central to the current study, as it may justify why Saudi Arabian families shun CAM to minimise the risk of being disgraced and being outcasts (Franz et al., 2010). By extension, it could provide a rationalisation to why TM is perceived to be taking too long to be integrated into the treatment of such conditions (Chang & Horrocks, 2006).

Since some neurological disorders are chronic and incurable, patients with such disorders may resort to alternative medical interventions, including TM. A survey by Jan et al. (2015) explored the risks that children with neurological disorders face with the use of TM. However, the study appears to have neglected to provide any data on the frequency of the use of TM among adult patients with neurological disorders in Saudi Arabia, possibly due to the challenges arising from stigma due to negative attitudes. This study therefore endeavoured to provide rationalisation for the stigma perpetrated by medical professionals based on the attitudes they may harbour regarding TM.

## 2.3. A review of issues surrounding the integration of CAMs with orthodox medicine

In Saudi Arabia, and indeed in many countries with relatively advanced health care systems, various integrative clinical settings have emerged (Al-Dalee & Aljubran, 2012). Diverse treatment modalities, dynamics of interactions among professionals, and numbers of professionals characterise these relatively recent settings (Robinson & McGrail, 2004; Boon

et al., 2006). While the integration of CAM with parts of orthodox medicine appears to be gaining recognition in some countries with developed health care systems, such a plural approach to health care is only recently gaining recognition in Saudi Arabia (Alamri et al., 2016). The country's health care context is important in understanding the various issues that influence the integration of CAM with orthodox medicine, and how successful such an integrative initiative can be. Factors such as the predisposition of health professionals, the country's health policy, public awareness and perception, and the political willingness of the state have significant implications for efforts aimed at building and facilitating a plural health care system (Alzahrani, et al., 2016; Clark, Fitzgerald, & Almalki, 2011). As stated by Elolemey and AlBedah (2012), analytical studies related to integrated health care where CAM is involved are markedly scarce in Saudi Arabia.

The few existing studies found that while the number of CAM practitioners, such as those practising homeopathy and herbal medicine, in publicly funded clinical settings was growing, many practitioners worked on a part-time basis in public hospitals (Elolemy & AlBedah, 2012; Musaiger & Abahussain, 2014; Al Moamary, 2008). Interestingly, Gerber et al. (2014) found that in most cases CAM practitioners did not participate in hospital decision-making or daily activities such as taking rounds to assess patients.

Discourse on issues of health care integration between CAM and orthodox medicine in Saudi Arabia must evaluate the place and role of the NCCAM (MOH, 2011). Established under the MOH, the NCCAM's primary role is to act as a reference point for activities in the Ministry pertaining to CAM. The Centre provides a regulatory framework for monitoring the use of CAM practices, while educating the public on their safe use. Its objectives include (MOH, 2011):

- provision of infrastructure, information and organisational capacities for training professionals on the use of CAM modalities

- regulation of CAM practices to ensure quality and safe use
- development of practitioners' skills with regard to CAM practices
- enhancement of the public's knowledge, health seeking behaviours and attitudes to the use of CAM
- establishment of appropriate infrastructure necessary for developing medicine derived from Islam and Arab culture
- undertaking and facilitating scientific research to stay abreast of developments in the field of CAM.

The establishment of the NCCAM is commendable and could be an indication of the Saudi government's commitment to tapping into the benefits of CAM, especially for a population that is increasingly suffering from costly chronic diseases (Clark, Fitzgerald, & Almalki, 2011). However, the Centre and indeed the MOH face several operational barriers, such as financial sustainability, and inadequate capacity to facilitate effective clinical models in which CAM practitioners and biomedical professionals can work inclusively in the health care system (Elolemy & AlBedah, 2012). Many biases still exist toward CAM, and this has served as a barrier to full acceptance of these treatment modalities in orthodox medicine (Alamri et al., 2016).

The establishment of a regulatory body for CAM indeed calls for additional research on CAM practices and regulations to guide policy development in this relatively new area of the country's health care system (Boon et al., 2006). Presently, some CAM practitioners in Saudi Arabia are unregulated and possibly offering services with minimal or no training, a situation that not only serves as a barrier to integration but also calls for urgent policy development to ensure safe interaction between biomedical and CAM therapies (Aldossary, While, & Barriball, 2008). Stakeholders in orthodox medicine are often adamant about the application of empirical approaches such as randomised control trials as a standard for

medical research (Al-Mutair et al., 2014). This can easily slow down the process of integration or prevent comprehensive integration of health care models altogether (Al Moamary, 2008; Al-Arifi & Al-Omar, 2011; Al-Faris, 2017).

Admittedly, decisions pertaining to health care should be based on some evidence, the nature of the evidence notwithstanding. In this regard, effective policy development requires unanimity among stakeholders about the standards of evidence for safety and efficacy and determining the evidence base from which to proceed (Ahgren, 2012). As such, a good place for the NACCM to start in establishing an efficacious policy framework is by developing standards of evidence to evaluate the quality and safe use of CAM among licensed practitioners. Boon et al. (2006) argued that comprehensive integration of CAM modalities with conventional biomedicine would require stakeholders to reassess research methods and the basis for evidence as issues such as the role of evidence come to the forefront of the CAM discourse.

Other than the need for evidence-based practice in a health care model that intrinsically lacks an empirical basis, health care stakeholders such as the NCCAM are further faced with the issue of determining the nature and construction of the integrated care team (Al-Dalee & Aljubran, 2012). As more and more Saudis seek services from providers of homeopathy, traditional/religious healers, acupuncturists and naturopaths alongside primary health care professionals, there is an urgent need to kick-start a policy development process to determine whether CAM professionals would rightly fit in a team-based primary care model. The implications of such an integrative process for the people's health and for insurers must be considered (Al-Faris, 2017; Clark, Fitzgerald, & Almalki, 2011).

Medical practitioners' perception of CAM also has implications for policy development with a focus on integration (Elolemy & AlBedah, 2012). In their cross-sectional

survey on the knowledge and attitudes of health professionals in Riyadh toward CAM, Albedah et al. (2012) found that up to 88.9% of respondents were relatively knowledgeable about CAM. Those with a doctorate or bachelor's degree were significantly more knowledgeable about CAM modalities than those with a diploma. The researchers concluded that there is willingness among health professionals to improve their knowledge of CAM practices. Still, there is a greater need for health education to engage in research to provide practitioners with evidence-based knowledge of CAM (Elolemy & AlBedah, 2012; Albedah et al., 2012).

Hassan (2015) conducted an anonymous survey among randomly sampled practitioners including nutritionists, physiotherapists, social workers, psychologists and dieticians to assess their interest in CAM practices, and their views on risks, safety and efficacy. Study results indicated that while 90% of the respondents were interested in educational opportunities to further their knowledge of CAM, only 7% of the practitioners interviewed had heard about CAM previously. Like other studies evaluating health practitioner knowledge of and attitude toward CAM, this highlighted the need to integrate a CAM training program in conventional medical training and professional development, to equip practitioners with the right tools to provide holistic and efficacious treatment for patients in Saudi Arabia (Ghazeeri et al., 2012; John et al., 2017; Musaiger & Abahussain, 2014).

As a matter of policy development, recommendations can be made on the role of the NCCAM in facilitating policies for integrating CAM with biomedical practices while providing a versatile and relevant regulatory framework for patient-centred care. Based on Kreitzer's (2001) model of strategic decision-making and planning, the process of including CAM practices in Saudi Arabia's health care setting could emulate the following steps

undertaken by the NCCAM as a key stakeholder, and this research explores the last two steps:

- identifying clear mandates with the aim of effective policy development
- clarifying the objectives of the national health care system
- assessing opportunities for integration and identifying potential challenges
- identifying needs gaps such as practitioners' skills, level of interest, perceptions and opportunities for knowledge development.

This proposed four-step process provides a preliminary basis from which a body such as the NCCAM can begin a policy development process, with the goal of bringing CAM as a treatment mode into the clinical setting to provide holistic care for a population with increasingly complex health care needs. Knowledge development and dissemination to key stakeholders including biomedical practitioners, CAM professionals, decisionmakers, government agencies and consumers is vitally important (Kreitzer, 2001). This would ensure that integration does not take place in a vacuum but is instead influenced by empirical evidence. Ahgren (2012) posited that rational policy development around CAM requires infrastructure to support evidence-based training and education to equip CAM practitioners with the right tools to appraise and apply empirical knowledge to provide safe, quality, and efficacious treatment.

Policy development by stakeholders should fundamentally consider the views and perceptions of consumers of CAM and conventional medicine (Boon et al., 2006). Factors such as consumers' health seeking behaviour, use of CAM and biomedicine, and perception of both models of care can have an impact on the nature, process and modalities of including CAM into the existing health care system (Ross, 2009). Indeed, Robinson and McGrail (2004) found that consumers have diverse views and needs with regard to their use of CAM.

Chapter 2: Literature Review

Safe and effective use of unconventional medical practices and approaches requires a keen understanding of consumers' needs and behaviours, which in turn influences policy decisions (Robinson & McGrail, 2004; Singer & Adams, 2014).

## 2.4. Models of health care systems

Models of health care have significant implications for the delivery of services to individual patients and entire communities (Davies, 2005). The biomedical model of health has largely been dominant in the understanding of illness and the delivery of health care, not just in western countries but also among emerging and developing economies such as Saudi Arabia (Davies, 2005; Engel, 2012). However, this model has been criticised, with researchers and practitioners arguing that a biomedical approach to illness and health care lacks the framework to explain many causes and forms of illness (Engel, 2014).

A purely biomedical approach views illness as having a single dominant cause, holding that in all manifestations of illness, pathology is always the only cause, and therefore the elimination or control of the pathology should result in a state of health. Qualitative studies seeking to evaluate the underlying hypotheses around the biomedical model have largely found these assumptions to be misleading (Heggenhougen, 2006; Langdon & Wiik, 2010). Key assumptions of this model include that (Engel, 2012):

- illness and symptoms are caused by a disease, which is conceptualised as an abnormality with the functioning of a body organ
- all diseases trigger symptoms, and other contextual factors such as the environment or culture do not have an impact on the development of disease
- disease is equated to the absence of health
- mental and emotional problems are seen as separate from the rest of the body's functions
- the patient is seen as lacking responsibility for illness and as such is considered a victim

- the patient is required to cooperate with the health care professional in the administration of treatment and play a passive role.

Models of illness have a direct impact on public health policy and the attitudes toward individuals and communities with certain illnesses (Cant & Sharma, 2010). For example, in the past, chronic diseases such as diabetes and heart disease were primarily viewed in Saudi Arabia as diseases of the rich. However, large swathes of the population across different socioeconomic strata are ailing from these chronic lifestyle diseases (Ciftci, Jones, & Corrigan, 2013; Harper, 2005). These changes in the prevalence of chronic diseases in the country necessitate a change in perception among health care providers and policymakers to effectively address them across different communities (Heggenhougen, 2006).

Biomedical approaches to illness emphasise a causal connection between illness and disease, which has prompted medical professionals to resort to the medicalisation of any feelings of unwellness (Jazieh et al., 2012; Wilkinson, 2005). As such, when patients demonstrate illness without a clear or direct disease process, health care professionals may dismiss what the patient says they are feeling (Dacher, 2006).

In spite of its shortcomings, the biomedical model of health is supported by numerous empirical studies (Wilkinson, 2005). The model of illness adopted in a country has implications for the way health care providers view symptoms, the decisions they make about a person's health status, and the form of treatment they provide. Any change in how health care providers view symptoms or frame illness impacts how patients use the health care system, which has implications for public health policies (Wright, 2005; Davies, 2005). Where the biomedical model of illness is dominant, health care providers' interpretation of illness is especially important. However, in increasingly pluralistic health care systems such as in Saudi Arabia, the interpretation of illness by traditional or alternative health care

practitioners is also essential in determining whether an individual is sick and therefore deserving of government-provided health care benefits and services (Engel, 2012; Cant & Sharma, 2010; Malowany, 2012).

Biomedical models fundamentally overlook social, cultural and psychological factors and the role they play in illness (Malowany, 2012). While some illnesses do occur without any manifestation of pathology, health care professionals working within the biomedical framework automatically seek to attach medical diagnoses to any manifestation of illness, and therefore medical treatment (Gray, Brody, & Johnson, 2005). Penkala-Gawęcka & Rajtar (2016) discussed the complexities arising from illnesses that do not seem to present any specific cause. Such illnesses have been found to be linked to social and psychological factors. Conversely, failing to recognise that illnesses may present somatically and sometimes be caused by nonmedical factors also has serious implications for public health policies (Serlin et al., 2011; Spector, 2013).

The manner in which government funds are allocated to specific communities or groups of diseases largely depends on the rate of diagnosis of these diseases (Sujatha, 2011). As such, funds are essentially directed to medical diagnosis and treatment, while alternative interventions that have proven effective are overlooked or underfunded (Wiese & Oster, 2010; Wright, 2005). The strict delineation between physical health and mental health presents a challenge especially for the treatment of chronic diseases and physical disabilities. Ciftci et al. (2013) observed that mental and emotional states have a significant impact on physical wellbeing, and therefore mental health should not be framed as secondary to physical health in the context of policy planning and health delivery.

Leslie (1980) propagated the term medical pluralism, an anthropological conceptualisation that defines the tendency for individuals and communities to use more than

one health care service. Leslie (1980) argued that unlike the normative view held within the realms of biomedical thought, the anthropological view can evaluate medical pluralism without bias, given its focus on the nuances of local medical systems. Within the realm of medical pluralism, there is a continued division of labour between different health care resources so that modern medical practices adapt to and integrate with local cultures (Harper, 2005; Kleinman, 1980). Therefore, health policy experts who seek to encourage the use of both traditional and conventional medicine in developing countries such as Saudi Arabia have the task of learning more about the dynamisms of medical pluralism (Langdon & Wiik, 2010).

While the concept of pluralism has passionate supporters in the fields of medical and sociological anthropology, it has also received significant criticism in the last few decades as an approach that privileges the perspective of medical professionals over that of patients (Langdon & Wiik, 2010; Penkala-Gawęcka & Rajtar, 2016). Medical pluralism has also been criticised for neglecting the influence of power relations and political, economic and structural factors on health care, and for supporting the hegemony of biomedicine (Porter, 2005). Critical medical anthropologists in particular are sceptical about the concept of pluralism given the evidential dominance of biomedicine, even in developing economies where traditional therapeutic practices tend to be more acceptable (Serlin et al., 2011). However, other less critical anthropologists have posited that the dominance of biomedical over other health care models is not necessarily absolute (Sujatha, 2011; Wilkinson, 2005).

In spite of the criticism, medical pluralism has gained acceptance in the academic community, largely due to the increased popularity of CAM and the pressure that many governments face in terms of public health care funding shortages due to increased demand (Cant & Sharma, 2010). Factors such as globalisation and the widespread increase in the

exchange of goods, people, and healing practices have led to the conceptualisation of health systems as ‘medical landscapes’ where social dynamics, integration, movement among different parts of the system, and relatedness are defining characteristics (Harper, 2005). From this perspective, medical pluralism is seen not as components of the health care system existing separately but rather as parts that intersect and intermix to produce an amalgamation of diverse therapeutic practices (Langdon & Wiik, 2010; Malowany, 2012).

## 2.5. Health care systems as cultural systems

Culture has an overarching influence on the way people perceive, construct and deal with psychological and physical symptoms (Serlin et al., 2011). The way communities label and recognise emotion has implications for health care delivery, treatment models and health seeking behaviour. Within medical anthropology and sociology, culture may be defined as values and belief systems that define mental and physical states without resorting to biological or empirical influences (Boyer & Paharia, 2008). The cultural process is that in which social actors in a community label and form meaning of social phenomena, including illness (Spector, 2013). The experience of illness is universal, and communities uniquely organise themselves in a way that allows them to recognise and deal with situations of illness as a community and individually. As such, each society’s health care system is nuanced in line with the practices, belief systems and institutions communities create to deal with illness (Malowany, 2012; Porter, 2005).

Pluralistic approaches to health care recognise that health care systems are made up of different elements pertaining to health including existing information about the origins and causes of disease, treatment modalities and therapies, as well as the role of practitioners and their interaction with episodes of disease (Spector, 2013). Health care systems further comprise of the institutions, power dynamics, and bureaucracy responsible for maintaining

the community's state of health. Further, value systems, beliefs, symbols, and practices support the overarching system by enabling individuals and groups to define, recognise, and label the phenomenon of illness (Cant & Sharma, 2010). Viewed in this way, health care systems are not separate entities from the cultural influences of society. Recognising the health care system as a total, all-encompassing system makes it possible to understand the practices of a society's cultural system that influence individual health (Davies, 2005).

Cultures have different explanations about the nature and concept of illness (Davies, 2005; Engel, 2012). The way cultures classify disease hardly aligns with biomedical or empirical perceptions (Heggenhougen, 2006). In Saudi Arabia, there is the concept of *jinn* or evil spirit in which it is believed traditional healers have the knowledge to treat episodes of illness believed to be caused by evil spirits (Ciftci et al., 2013). This influence of culture results in multiple explanations for illness, which can be biomedical or non-biomedical explanations. Non-biomedical explanations of illness entail perceptions that attribute illness to poor functioning of the body, social factors as well as environmental factors, theological, spiritual or religious eschatologist (Jazieh et al., 2012). The emergent theories from these perceptions of illness give rise to a body of knowledge on preventive medicine, which focuses on altering factors such as individual behaviour and interactions (Langdon & Wiik, 2010).

Often, communities have both biomedical and non-biomedical theories of illness, resulting in a body of knowledge and practices that involve the application of more than one form of treatment (Penkala-Gawęcka & Rajtar, 2016). In addition to being a cultural ecosystem, health care systems are also social. Each social actor plays a unique role in the diagnosis and treatment of illness. The patient, just like the expert, has a role to play in terms of the expectations they have of the expert, the illness that can or cannot be treated by a

certain specialist, and the nature of treatment accorded to the patient (Porter, 2005; Serlin et al., 2011). Even in a relatively homogenous society such as Saudi Arabia, specialists commonly practise a wide array of therapeutic techniques, which patients and their families may accept or reject based on factors such as the opinion of peers and family, as well as economic factors (Langdon & Wiik, 2010).

Understanding the integration of CAM and biomedicine and the implications for public health could benefit from an anthropological perceptive of illness and health (Wright, 2005; Wilkinson, 2005). Over the last three decades, medical anthropological theory has undergone significant changes to take a more holistic and critical perspective. This change in perspective has seen structures such as the biomedical approaches that were previously considered right and good come under intense criticism (Wilkinson, 2005). Still, the influence of anthropology over health care policy is relatively limited, given that policymakers have traditionally viewed anthropological data as less valuable than empirical or epidemiological research findings (Wiese & Oster, 2010; Wilkinson, 2005). Nevertheless, anthropological approaches to disease aetiology allow public health experts to consider multiple factors and their contributions to illness. In particular, anthropological research expands inquiry into the realm of culture, environment, genetics and social factors (Wade, 2004).

Serlin et al. (2011) have argued that the anthropological dimension of medicine can allow those involved with public health policy to determine the influence of culture on the prevalence of disease, and therefore to find ways to mitigate cultural elements that could play a role in disease prevalence. Conversely, factorial models of health tend to draw a strict distinction between the mind and body, between natural and unnatural causes of disease, with factors such as environment and culture given less prominence (Malowany, 2012). This

distinction continues to be prevalent in western medicine, where biomedical approaches dominate public health discourse. However, 'new age' anthropologists are arguing for the need to approach the experience of illness using a more integrated perspective (Langdon & Wiik, 2010; Heggenhougen, 2006). Medical anthropology therefore provides an alternative to the predominant biomedical model of disease, and aids in the understanding of pluralism in health care and ways to meet the diverse needs of individuals in an integrated health care system (Harper, 2005).

Holism is a key concept in the evaluation of integrated health care systems, and anthropological approaches can aid in the development of policies that support such systems (Harper, 2005; Heggenhougen, 2006). Anthropological theories of health care give practitioners a more holistic view through close observation to understand the macro level factors that cause individuals and communities to act in a certain way in the context of illness and diseases. A holistic view of the experience of illness is an alternative to factorial biomedical models that often fail to consider the influence of culture in health care. Viewing culture in isolation from the overall structures and institutions of health care often leads to health policies that amount to victim blaming, which can be counterproductive in terms of effective health care delivery and management of disease prevalence (Engel, 2014). In a stratified country such as Saudi Arabia, public health is indeed at a crossroads between taking a narrower focus on issues of health care delivery and focusing on the bigger picture, which entails considering factors such as culture, environment and social structures, and their influence on community health (Heggenhougen, 2006; Ciftci et al., 2013).

## 2.6. Kleinman's model of pluralism in health care

Kleinman (1980) explored the intersection between medicine, mental health and anthropology. His view of the health care system as a cultural system was a significant move

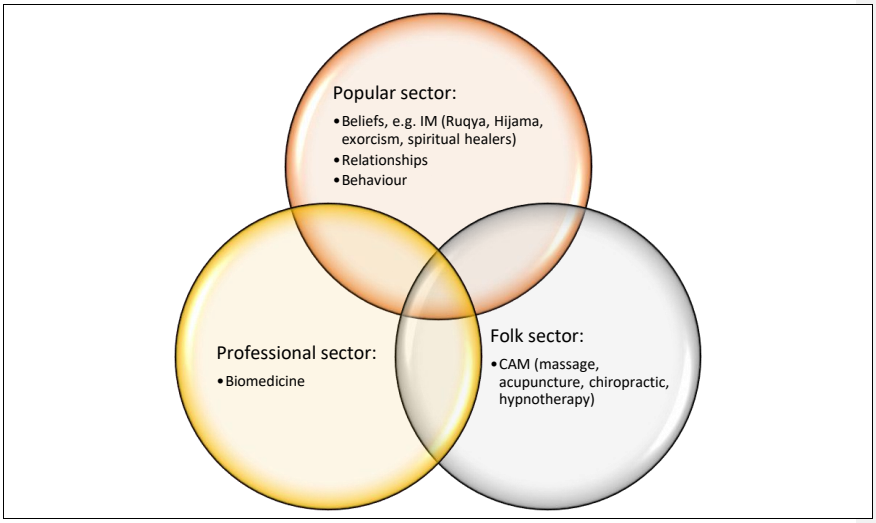
away from the predominant model of health care delivery. The Kleinman model envisioned the health care system as comprising of three interacting elements: popular, professional and folk.

The popular element of the health care system comprises the non-professional, non-specialist sector, where illness is initially defined and health care activities begin. The majority of illnesses are managed within the popular sector (Kleinman, 1980; Langdon & Wiik, 2010). Within this sector, patients are usually experiencing symptoms, labelling the disease, taking on a specific sick role, engaging in health seeking behaviour, undertaking treatment and assessing the efficaciousness of treatment. In this arena, the patient makes sense of the illness using value systems and beliefs that are embedded in popular culture (Langdon & Wiik, 2010).

The second element is the professional sector, which comprises the organised medical profession supported by the prevailing culture.

The folk sector comprises the non-professional, non-bureaucratic but specialist sector made up of secular and religious healers who disseminate their treatment through popular media, including self-help books and television (Kleinman, 1980).

## 2.7. Mapping Saudi Arabia's health system according to Kleinman




In addition to conceptualising health care delivery as a cultural system, Kleinman (1980) also propagated the explanatory model of illness. This model describes the explanations people give to make sense of illness. In pluralistic health care systems, people in the three different sectors – popular, professional, and folk – typically present different and sometimes contradictory explanations of the causes of illness (Malowany, 2012). The differences in the exploratory models among people in all three sectors are especially helpful in characterising medical systems. An anthropological approach to assessing health care systems allows a better understanding of the perception of illness by the different actors involved in the health care system and the way they approach treatment. To understand the dynamics of a health care system, it is important to evaluate patients' experiences of illness, the interactions between practitioners and patients, and the process of healing (Porter, 2005).

In his model of pluralism in health care, Kleinman (1980) posited that illness and health care are much more expansive than what is provided by the biomedical system. This is especially true in societies where the experience of illness and delivery of care is not solely focused on the interaction between doctor and patient, but also influenced by cultural, social

and environmental contexts. Indeed, over 50% of illnesses in Saudi Arabia are managed outside the professional or formal health care system. As such, all health care systems must serve several key clinical purposes. As a cultural system, a health care system should frame illness as a phenomenon with psychosocial influences. This construction requires a distinction between illness and disease as envisioned in medical anthropology (Cant & Sharma, 2010).

Within the anthropological framework of health care, disease is defined as abnormal health as perceived within the professional sector of the health care system (Penkala-Gawęcka & Rajtar, 2016). However, this perception of health care is limited by empiricism. Illness describes the way in which disease is constructed into an experience influenced by cultural, social, interpersonal and environmental perceptions (Langdon & Wiik, 2010). Any instance of illness triggers different explanatory models by all those involved in the clinical process of dealing with the illness. Those involved in the clinical process may include the patient, family, friends, medical professionals, and secular and non-secular healers. When these explanatory models merge, they result in a pluralism of meaning of illness and health care (Heggenhougen, 2006). In a pluralistic health system such as in Saudi Arabia, for example, there is a somatisation of mental illness so that the illness is defined by an array of physical symptoms instead of the associated psychological symptoms, given that open expression of one's feelings is often stigmatised (Engel, 2012).

Numerous studies have been conducted to evaluate the perception and construction of mental illness in Saudi Arabia. Elbur et al. (2014) in their Taif study of the perception of mental illness among patients' relatives found that most preferred for them to receive home-based treatment, and an equally large percentage believed that mental illness could be cured using a combination of conventional and spiritual treatments. The researchers concluded that stigmatisation of mentally ill patients is still widespread and such illnesses are not openly

discussed. Elsewhere, Ciftci et al. (2012) found that in Muslim communities, culture significantly influences the presentation of mental health problems. Given that physical symptoms are less stigmatised, mental health issues are usually expressed in these terms. The open expression of emotional symptoms such as feelings of worthlessness or hopelessness rarely occurs (Engel, 2012). Emotional instability, especially in women, is often presented as a conversion disorder with almost no recognition of the psychological issues at play. Mental illness may also be explained away using normative cultural beliefs such as the influence of evil spirits, which may prevent the patient and their family from recognising the role of psychiatric factors (Cant & Sharma, 2010).

## 2.8. Summary

This chapter outlines the use of CAM in the Middle East and discusses the factors influencing people's choice to use CAM. The most significant factors were gender, age and religion. A review of the literature highlights issues surrounding integration, such as health care professionals' predisposition, health care policy, public awareness and lack of political efforts to facilitate a plural health care system. Effective policy development, a clear objective of the health system, and identifying challenges and gaps can help the NCCAM in developing a national policy for CAM integration with biomedicine.

The chapter also discusses models of health care systems from a biomedical approach to the connection of illness and disease, and the pluralist health model that encourages the use of both CAM and biomedicine. In spite of criticism of a pluralistic health approach, cultural health systems in Saudi Arabia are significant due to cultural and religious beliefs, which play a unique role in diagnosis and treatment. Kleinman's model of pluralism in health care can be used to map out Saudi's health system as follows:

1. Popular sector, in which the patient is assessed and treated based on beliefs and values. This could include the use of IM in Saudi Arabia.
2. Professional sector, including medical professionals.
3. Folk sector, comprised of CAM practices.

Chapter 3: Methodology and Methods

Chapter Three: Methodology and Methods

This study seeks to examine the most appropriate ways of integrating CAM into the key health system of Saudi Arabia through two fundamental approaches. The first element reviewed the literature to identify the current CAM practices present in the Saudi health system, while the second explored the interest levels among health care providers regarding integration of CAM in the country. This involved identifying their beliefs, feelings and preferences about CAM/TM, which influence its integration. The study employed a mixed methodology that involved both quantitative and qualitative methods in addressing these concerns, in addition to formulating a comprehensive research design and data collection strategy.

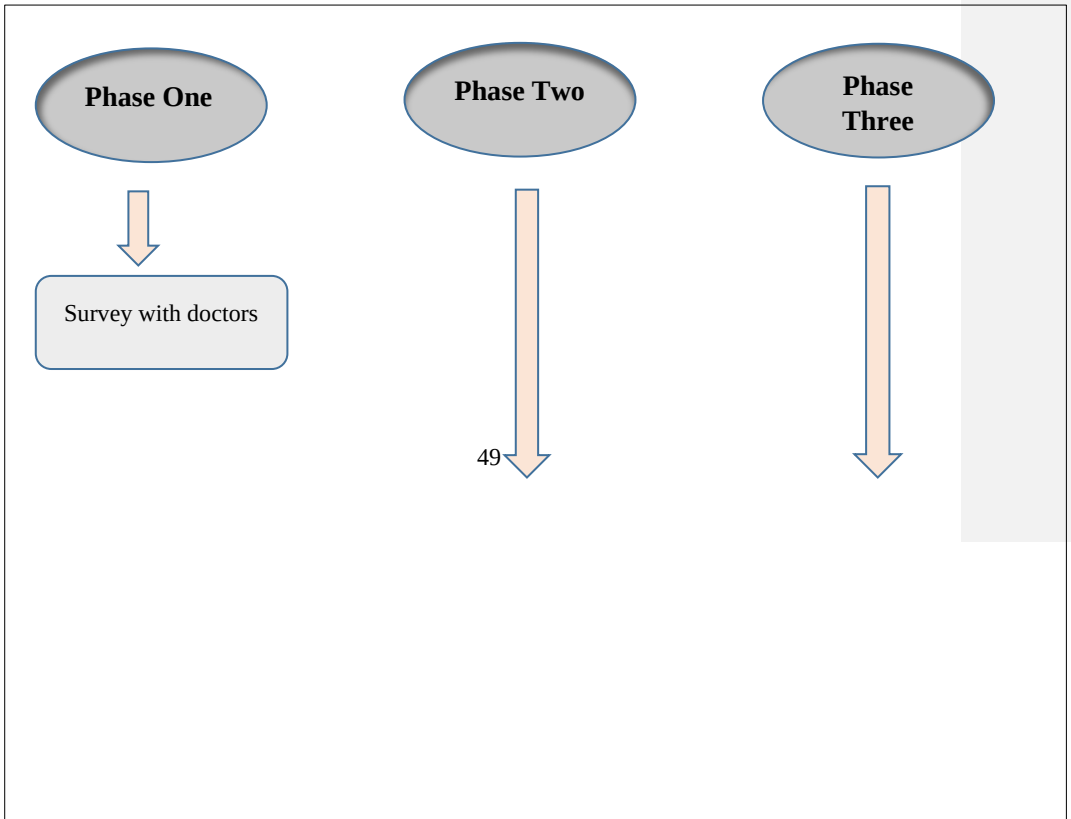
3.1. Mixed methods

Mixed methods research is a model of inquiry that uses both qualitative and quantitative approaches with the aim of producing robust evidence and presenting knowledge more meaningfully, in a way that neither approach could achieve alone (Bishop & Holmes 2013). Bazeley (2004) noted that the philosophical rationale of pragmatism informs the need to use qualitative and quantitative research approaches in a single study. At the heart of pragmatism is the compunction to use approaches that work the best to achieve specific results. As such, researchers can choose different models of inquiry depending on what is best suited to address the study's research questions (Bishop & Holmes 2013). While some research questions lend themselves well to qualitative inquiry, others are best suited for quantitative analysis. Quantitative research is fundamentally influenced by a belief in an independent and known reality, while qualitative inquiry is rooted in the view of a subjective reality that can be understood through conceptual frameworks that vary across cultures, groups and individuals (Bazeley, 2004).

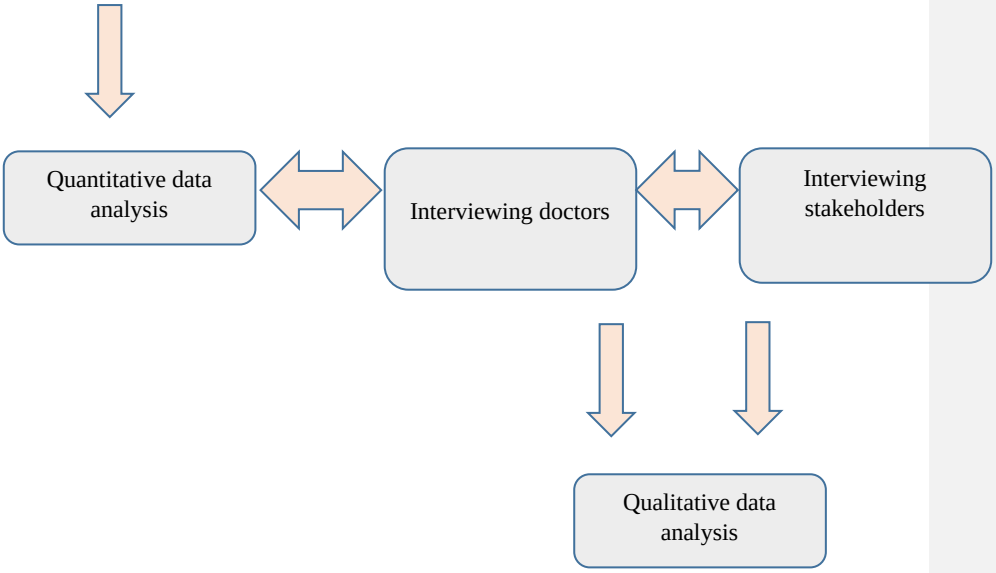
Chapter 3: Methodology and Methods

Evidentially, these ontological views are worlds apart, given that reality cannot be external and independent and also subjective and knowable through contextual experiences. These opposing views have significant implications for research methodology. Overlooking these epistemological issues is tantamount to producing questionable research (Bishop & Holmes, 2013). Mixed methods essentially compel the researcher to consider the obvious epistemological issues that arise especially from quantitative research. Using a quantitative approach to conduct qualitative interviews would cause researchers to have a large sample and use inflexible approaches to data collection and analysis. As such, they would not be able to capture social contexts that can only be revealed using qualitative inquiry (Schiff et al., 2014). In the same way, using qualitative epistemology in randomised trials would lead the researcher to gather a small and unrepresentative sample, thereby failing to control for bias, and miss out on identifying the causal relationships that can only be revealed by quantitative inquiry. Comprehensive mixed research methods are therefore more fruitful when philosophical and technical views are applied to overcome the inherent difficulties of using qualitative and quantitative approaches in a single study (Bazeley, 2004).

The figure below shows the three different stages of the research and the respective timelines for each phase.



Chapter 3: Methodology and Methods




By employing a mixed methodology, this study provides a more comprehensive perspective and better understanding of the attitudes and perceptions of medical practitioners towards the use of TM as an alternative to contemporary medical intervention. A mixed-method design helped to evaluate the opinions of doctors regarding the applicability of CAM to the WHO ideals of UHC in health care institutions in Saudi Arabia. Interviews, surveys, and a thematic analysis were conducted, including self-administered, closed-ended questionnaires. The degree of agreement with traditional techniques was assessed and analysed based on a five-point Likert scale.

The use of surveys for this study is important in understanding the issues to consider when integrating CAM/TM with orthodox medicine in the Saudi health care system from the perspective of doctors, physicians and hospital managers. Furthermore, surveys enhance understanding of the potential impacts of integration on these stakeholders, by comparing the differences and similarities in their perceptions of CAM/TM and its integration with orthodox medicine. Using interviews for doctors and practitioners unearths more information than would surveys.

Boyce and Neal (2006) described qualitative interviewing as a method for gaining a complete picture of a research phenomenon, including the underlying reasons. In the case of

this research, the interviews go beyond revealing whether the respondents have a positive or negative perception of the integration of CAM/TM in orthodox medicine to uncover the underlying reasons for these perceptions. It is an apt method for in-depth exploration of issues that may hinder or enhance the integration of CAM/TM within orthodox medicine.

On their own, qualitative and quantitative methodology have weaknesses that may negatively affect the validity and reliability of the study findings. Qualitative research is prone to biases by the researcher and does not offer the advantage of statistical analysis and generalisation (McKim, 2017). On the other hand, quantitative research does not provide the setting or context in which the data is gathered. This necessitates the adoption of mixed methods as a solution to offset the respective shortfalls of qualitative and quantitative methodologies. It affords researchers synergistic and complete utilisation of data in comparison to single-method research (Wisdom & Creswell, 2013). In the case of this study, mixed methods were integral in an in-depth understanding of the perceptions of health professionals towards the integration of alternative medicine into the health care system. The inclusion of qualitative methodology was helpful in explaining the figures obtained through the quantitative study that was conducted in the first phase. Another rationale for employing mixed methods is its ability to validate the study by providing extra support and evidence for the findings (Wisdom and Creswell 2013). The combination of qualitative and quantitative methodology provides researchers with different options for communicating the results of the study by virtue of the fact that they can use statistics or words. In the case of this study, this method offers the chance to appeal and reach out to a wider audience.

## 3.1. Overview of research methodology and timeline frame

## 3.2. Quantitative methods

The study was a cross-sectional descriptive survey conducted in Riyadh, Makkah and Aseer between September 2016 and January 2017. Physicians working in hospitals in the selected regions were the main target of the study.

Based on the 2015 Saudi demographic census, Riyadh has 42 hospitals staffed with 4,925 physicians, Makkah 40 hospitals with 4,777 physicians, and Aseer nine hospitals with 779 physicians. From each of the three regions, two hospitals and three PHCs were chosen

randomly, so that in total six hospitals and nine PHCs were included in the study. From the selected hospitals and PHCs, a systematic random sample of volunteer physicians was selected with the approval of the human resources department to arrive at a final sample of 500.

3.3. Region selection

Makkah, or Mecca, is one of the most culturally diverse and most populated regions in the country. Millions of pilgrims visit the holy city every year, bringing their own traditions and healing methods, contributing and adding to CAM practices. The region is located in western Saudi Arabia.

Image source: Wikipedia

Riyadh is located in the centre of the country, with an estimated population of more than six million making it the second largest region in Saudi Arabia. The region contains the capital and largest city, and represents most urban cities.

Image source: Wikipedia

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Aseer is located in the southwest of the country, with an estimated population of around two million. Most of this region comprises rural villages and only a few cities.


Image source: Google maps

3.4 Research design and data collection

Collection of data entailed the use of a self-administered questionnaire of 29 questions in which participants were requested to provide information on demographic data, knowledge about CAM, attitude toward CAM with regard to its integration with biomedicine, and practice using CAM with regard to the patient–physician relationship. The questionnaire also sought information on workplace factors that have implications for CAM use among physicians, such as the type of awareness provided to patients and information sources administrated by their workplace. The questionnaire was informed by the WHO 2014–2023 Traditional Medicine Strategy, which covers three guidelines for integration: safety, effectiveness and quality of CAM therapies. The human resources staff in each hospital were trained to select a random sample of volunteer physicians and psychiatrists and exclude all other staff, then distribute and collect the questionnaires and manage any obstacles.

The researcher obtained a signed consent from the participants, including voluntary participation. A letter requesting the questionnaire to be sent to medical physicians only was sent to human resources in each hospital and PHC to distribute randomly with printed and

numbered questionnaires; a participant information sheet with a consent box to tick was also provided with each questionnaire. The questionnaires were printed with a unique reference number. This number was not linked to the participant, maintaining the participant's anonymity. The Ethical Committee of the NCCAM and the Liverpool John Moores University Ethics Committee approved the study.

### 3.5. Data analysis

A review of completed questionnaires was conducted; 20 had incomplete or faulty data and were therefore excluded from the study. The remaining 35 questionnaires were coded and the data were input into SPSS statistical software. Data were statistically analysed and presented using mean and standard deviation. The chi square test was used to evaluate the relationship between the variables and the demographic data presented by participants. A Likert scale was used to evaluate the extent to which physicians agreed with the practice of CAM. A response of 'strongly disagree' was measured by a mean score of 1–1.72, 'disagree' was 1.73–2.50, 'agree' was 2.51–3.25, and 'strongly agree' was measured by a mean score of 3.26–4. The data analysis based its level of significance at 0.05. A second person verified data for accuracy.

The participants (n=35) included medical practitioners and other stakeholders in the health industry in Riyadh. Of those 35 participants, 30 took part in the quantitative facet of the research and five in the qualitative aspect. The researcher deemed the sample sufficient in meeting the demands of the study, as it leveraged the experience of professionals. Reliability for the reaction on the use of TM/IM amongst medical professionals and stakeholders reached 0.715 (>0.70), while that for attitude reached 0.727, both of which are acceptable levels. The researcher projected correlations to be at approximately 0.75–0.89 (Koehn & Lehman, 2008). Subsequently, the legitimacy of the perception degree was measured using

internal consistency, a strategy that has a high probability of providing a legitimacy signifier through a correlation coefficient (Boynton & Greenhalgh, 2004).

Angermeyer, Holzinger and Matschinger (2009) have noted that population-based studies appear to tend to underrate the impact of emotional reactions and perceptions of health practitioners about the use of alternative medicine. Some researchers consider this instrument's consistency proportional to its reliability coefficient, and a study with a minimum value of 0.70 is desirable (Koehn & Lehman, 2008; Grove et al., 2014).

### 3.6. Limitations

A major reason for conducting a pilot study is to determine initial data for the primary outcome measure, to perform a sample size calculation for a larger trial (Ross-McGill et al. 2000; Stevinson & Ernst 2000). Not conducting a pilot study is one of the limitations the researcher has faced. Consequently, the selection of physicians represented a limitation because it had to involve human resources, and the researcher lacked complete control over the process.

### 3.7. Qualitative study

Qualitative inquiry is used in CAM studies when there is a need for the researcher to understand the subject's experience, perception and attitude toward health care and specifically the use of CAM (Bazeley, 2004). This approach is applicable for exploring phenomena and answering questions pertaining to the nuances of individuals' experiences. In many ways, qualitative studies encompass an interpretative approach to health care studies and demonstrate greater flexibility than quantitative studies. Although studies on CAM have historically applied quantitative approaches, qualitative inquiry has become increasingly necessary for the development of practical solutions for the integration of CAM.

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In the context of studying the integration of CAM, qualitative inquiry enables the researcher to delve deeper into people's subjectivity and to consider the complexities that characterise human behaviour (Cochrane & Possamai-Inesedy, 2013). Randomised controlled trials often lack the ability to evaluate individual and whole aspects of human dynamics, given that such quantitative approaches overlook the contextual factors that inevitably influence these dynamics. Qualitative research models are therefore more appropriate for the study of whole systems such as health care systems. Overall, qualitative inquiry adds value to CAM studies by aiding the researcher to gain deeper understanding of complex nuances that may not be fully understood using empirical methods (Franzel, Schwiegershausen, Heusser, & Berger, 2013).

The current study used two separate qualitative studies. The first involved interviewing physicians to follow up on and elucidate the answers they provided in the self-administered questionnaire. The second involved interviews with representatives at the MOH in Saudi Arabia to evaluate their perceptions of CAM and barriers to integration into mainstream medicine.

Data credibility was determined by reviewing a multidisciplinary group of health care professionals and stakeholders with divergent perspectives. Interviews were conducted with 35 participants, an exercise that delivered an expected response rate – a 58.3% refuse rate and an equivalent 41.7% response rate of 3.33%. The interviews took approximately 20–30 minutes with each participant at their respective places of work for convenience purposes. They were conducted and transcribed in Arabic and/or English. The participants were also given questionnaires in those languages to complete, allowing the researcher to obtain demographic data such as gender, nationality, qualification, specialty, years of experience and work setting.

The researcher carried out the data entry and analysis using SPSS, while undertaking quality control at the data entry and coding stages. Data presentation was performed using descriptive statistics, including standard deviations, frequencies, means and percentages for quantitative variables. Confidence limits were computed at 95%, and the statistical significance had a p-value of $<0.05$.

## 3.8. Study I

The first qualitative study entailed semi-structured interviews with physicians in the sample group who participated in the quantitative study. The purpose of conducting a follow-up qualitative study with the physicians was to gain in-depth understanding of the results that emerged from the quantitative study. Interviews were conducted with thirty physicians who participated in the quantitative studies. The interviewees were selected from different hospitals in each of the three regions: Riyadh, Makkah and Aseer. Although the study involved a relatively small number of physicians, the researcher was able to evaluate their perception, knowledge and use of CAM. It is imperative to note that the sampling involved volunteers and the only challenge was the involvement of the human resources departments, which had to be comprehensively acquainted with the selection process through intensive training. The physicians interviewed were selected through random sampling using a random number generator.

Thirty-five interviews were completed with 30 doctors and 5 stakeholders, with approximately 10 doctors from each region interviewed for the purpose of equal representation. Most of the interviews were conducted in Arabic. For those not conversant in Arabic, the interviews were conducted in English. The purpose of the study was to evaluate the use of holistic health care in the health systems in Saudi Arabia, and to identify ways to achieve integration.

The interviews were conducted with doctors between the ages of 24 and 48 years, whose level of professional experience within the health care system ranged from one to 20 years. All doctors interviewed followed the Islamic religion but had different nationalities including Saudi, Pakistani, Yemeni, Egyptian, Jordanian, Syrian, American, Sudanese and Turkistan. Participants signed a consent form indicating their willingness to take part in the study prior to completing the interview questions. The consent forms were kept separately from the anonymously completed questionnaire to maintain anonymity throughout the study given that the consent forms could not be linked to any particular questionnaire

Human resources were asked to contact all the doctors who had participated in the survey and invite them to take part in an interview. Nine doctors responded from Makkah, 11 from Riyadh and 10 from Aseer.

| Region | Number of doctors | Doctors' specialities |
|---|---|---|
| Makkah | 9 | General practitioner<br>Gynaecologist<br>Internal medicine |
| Riyadh | 11 | General practitioner<br>Oncologist<br>Psychiatrist |
| Aseer | 10 | General practitioner<br>Gynaecologist |

Table3.1

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3.9.Method/ Data collection

The researcher used open-ended questions and prompts to understand participants' perception, knowledge and use of CAM therapies. Other topics included the types of CAM

therapies used and the role of gender and religious beliefs in physicians' perception and use of CAM. The issues of effectiveness and safety, or the perception of safety, were evidentially very significant as they emerged from the results and were extensively addressed throughout the interviews. Verbatim transcriptions of audiotapes were made and imported alongside field notes into the computer-assisted qualitative data analysis (CAQDAS) software NVivo version 8.

Analysis began after the data were transcribed. Framework analysis (Gale et al., 2013) was used to analyse the data to arrive at certain themes, which were developed from the research participants' accounts and from existing literature. The process of framework analysis involved the following steps.

### Transcription

For this study, the researcher translated the interviews from Arabic to English and examined the transcripts to ensure that any formatting inconsistencies had been resolved. They were thoroughly checked for errors by reading the transcripts and listening to the audio recording at the same time. The transcript data were supported by notes made during and immediately after the interview; these notes were particularly helpful in capturing background observations.

### Familiarisation

The researcher carefully re-read each transcript and listened to the audio-recorded interviews to become familiar with the data. This process of familiarisation was especially valuable in helping the researcher to record initial impressions or notes based on observations. This process also guided the researcher in sorting through the transcripts as part of the process of analysis looking for emerging themes.

## Coding

Coding entailed using labels to highlight interesting data emerging from the transcripts. These labels or codes placed in the left-hand margin were basically a few words or short phrases that summed up what the researcher thought the participant was saying. The researcher used the right-hand margin to record comprehensive notes that would aid in the process of analysis. These notes identified patterns and recorded ideas that would be valuable in analysis. After coding the transcripts, the researcher went through each coded section to understand the views of participants with regard to the use and efficacy of CAM in integrated health care settings, and how each code could be used to address the research questions. Finally, the researcher settled on a set of codes, and this contributed to the initial development of the study's analytical framework. During this process, it emerged that some codes needed to be grouped together as they were essentially related. The final analytical framework comprised thirty codes, grouped into fifteen categories, each of which was accompanied by a brief description of meaning to provide consistency throughout the coding process.

## Application of the analytical framework

The researcher used the CAQDAS package QSR NVivo version 8, importing the transcripts for indexing. Carefully going through each transcript, the researcher highlighted valuable text, and selected and attached a suitable code to highlighted passages. After coding using the analytical framework, the data was summarised in a matrix based on the emerging themes, using Microsoft Excel. The matrix was developed to include one row per research participant and one row per assigned code. The researcher abstracted data from transcripts for each code and each participant, summarised it word by word and added it into the corresponding cell. NVivo was used for effective access of indexed data for the codes within

each transcript. Quotes that were seen as potentially interesting were noted and highlighted within the matrix.

### Data interpretation

This part of the framework analysis process entailed generating key themes from the data by evaluating the matrix and deriving significant links between the categories and the participants. While conducting this process, the researcher considered the initial research objects and ideas that emerged from inductive analysis, as an inductive approach does not prevent the researcher from using existing theory to formulate the research question to be explored (Saunders, Lewis, & Thornhill, 2012). The researcher focused on developing themes that could elucidate the dynamics of the data set. During this process, ideas were generated, reviewed and organised in a way that contributed to the development of a solid body of qualitative findings.

## 3.10. Study II

The second part of the qualitative study involved interviewing five stakeholders in the MOH to try to understand the barriers and obstacles to CAM integration. Stakeholders included government policymakers, administrators and medical officers. The identification of suitable study participants was possible through snowball sampling, in which participants recommended others involved in shaping the country's CAM strategic plans and who would therefore positively contribute to the study. The sample size of five was arrived at using data saturation; interviews were stopped when it was evident that no new themes were emerging.

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A semi-structured interview was conducted based on a topic guide that was influenced by literature review and research experience. Participants gave their consent to be audio recorded and interviews were conducted with individuals and as part of focus group discussions. The researcher took comprehensive field notes including observed nonverbal messages. The interviews were conducted between February 2017 and March 2017, with each individual interview lasting 20–30 minutes and focus group interviews lasting an hour. The interviews were audio recorded and transcribed verbatim, and transcripts were counterchecked for accuracy.

The researcher recruited focus group participants at the Riyadh hospital with assistance from the hospital superintendent based on the participants' apparent relevant experience, as well as the maximum variation principle, to allow a range of topical perspectives. Three categories of health care professionals were selected to form the focus group to elicit diverse experiences and views. The group was provided with simple discussion schedules containing broad topics for discussion, with the researcher assuming the facilitator role. The topics were formulated from the research objectives and questions. During the focus group discussions, participants could share their views on these topics, which included their understanding as to what extent CAM is being applied in health care in Saudi Arabia. The discussions also covered perceptions of CAM/TM in Saudi Arabia and participants' perceptions of efforts to integrate this form of health care with orthodox medicine, with which they are more familiar. Another topic of discussion was participants' understanding of the efforts that are currently underway to mainstream CAM/TM into the Saudi health care system.

Opinions, attitudes and experiences regarding CAM/TM and IM were determined (Srinivasu et al., 2011). Prior to the discussion, the group was familiarised with the subject, and they were reminded of their professional codes of conduct regarding patient

confidentiality. Emails were sent to the participants a day in advance to confirm their attendance, inform them of the duration of the group discussion, and remind them that they had consented to participate, to avoid restlessness and potential legal issues (Cizza et al., 2010). The discussion was carried out in the hospital's conference room. For this discussion, the participants' sample size was five out of the sample of 30 who were already involved in the quantitative research.

### 3.12. Data analysis for qualitative studies

The framework method (FM) was used for data analysis in both qualitative studies among physicians and stakeholders. The FM model is a thematic content analysis method that seeks to identify patterns of commonalities and differences in qualitative research. The aim of FM is to aid the researcher to not only identify the interaction between different elements of qualitative data, but also to come to exploratory or descriptive conclusions around certain themes. Researchers Jane Ritchie and Liz Spencer developed the FM data analysis approach in the late 1980s (Gale, Heath, Cameron, Rashid, & Redwood, 2013). The current study applied all seven stages required by FM to analyse the interview responses and the results from the quantitative study.

A key element of the FM approach to data analysis is the matrix output, which consists of the cases, codes and summarised data. The matrix offers the researcher a structure for managing otherwise voluminous data, to be able to effectively analyse the database on code categories. In the current study, a case represents an individual interviewee, and the matrix output ensures that each individual interview is analysed in the entirety of the available data set. FM makes it possible to compare and contrast data across different interviews and within each interview, which is key to effective qualitative inquiry (Franzel et al., 2013).

The FM model of data analysis particularly lends itself well to the thematic exploration of semi-structured interview transcripts, and is therefore very relevant to the current study. Another advantage of FM for the current study is its flexibility as an analysis tool that can be used in different qualitative inquiries, whether theoretical, philosophical or epistemological. Unlike grounded theory, FM is not particularly concerned with the generation of a social theory. However, it can significantly aid in comparing massive amounts of data using an analytic framework espoused by the matrix (Gale et al., 2013).

Analysis was carried out after data collection. The researcher used a variety of techniques to sift, chart and sort the data according to core issues and themes. This firstly involved familiarisation with the transcripts of the interviews, focus group discussions and notes, enabling the researcher to gain some insight into the subject under discussion and the collected data (Ritchie & Spencer, 1994). The researcher listened to audiotapes and read the transcripts, creating familiarity with key ideas and recurrent themes. Due to time constraints and the large amount of data involved, the researcher used inclusion and exclusion methodology to select relevant portions for the study. One of the inclusion criteria was that the participants' responses had to be in relation to the research questions. This was necessary to allow the researcher to determine whether the study answered the research questions and by extension met the research objectives.

Secondly, the researcher identified a thematic framework using the notes taken in the familiarisation stage, and remained with the key concepts that the participants expressed. The thematic framework was used to filter and classify the data, and refine it if necessary (Ritchie & Spencer, 1994).

Next, indexing was done using NVivo to identify sections of the data relevant to a specific theme. Indexing is applicable to the textual data, including interview and focus group

discussion transcripts. Subsequently, the indexed data was charted within the themes for easy categorisation (Ritchie & Spencer, 1994). Then, the researcher mapped and interpreted the data by analysing it using SSPS Test Analytics, which is a qualitative version of the SPSS software package.

The first step of data analysis involved transcribing the data. Space was left on the transcript leaves for coding and notes. The transcription process provided ample opportunity for the researcher to get deeper into the data to gain better understanding. The second step involved re-listening to the audio recordings and rereading the transcripts for accuracy, while taking additional notes for later reference.

Next, the researcher undertook coding by reading the transcript and on each line applying a code indicating interpretation of the data. This was done to label different aspects of the data, which was then compared with other elements of the entire data. To ensure accuracy and minimise bias, a research assistant and five clinical officers from different hospitals were recruited for the coding process. Involving different perspectives in inductive coding is especially helpful to be able to identify unexpected trends and themes as opposed to simply coding literally and descriptively. The mid and later part of the coding process was done digitally using NVivo, which automatically tracks new codes.

The fourth step involved the development of an analytical framework, in which all researchers involved in the coding process agreed on the codes to apply to the remaining transcripts. Codes were grouped into clearly defined categories to form a tentative analytical framework. The next stage involved the application of the analytical framework by labelling transcripts with the code categories that were agreed on, using NVivo. This software does not analyse data in the same way it would quantitative data; rather, it was used to store and organise data for later analysis.

Stage six of the data analysis process involved transferring the qualitative data into the framework matrix, which was generated using a spreadsheet. Transferring the data, also known as charting, entailed summarising the voluminous data using categories from the transcripts. Care was taken to summarise the data while retaining the main messages conveyed in the interviews. NVivo was used to automatically tag and reference significant quotations in the interviews. The final stage of the process was the interpretation of data to identify patterns of commonalities and differences, and to evaluate causality and other emerging relationships.

### 3.13. Limitations

The methodological approach used to conduct this study has several limitations. First, the study only included participants from three regions in Saudi Arabia: Riyadh, Makkah and Aseer. The perceptions of physicians in other regions may be different due to different religious beliefs, dominant medical practices and existing knowledge. Study results therefore cannot be generalised to the entirety of Saudi Arabia. Future studies should include participants from other regions.

The qualitative studies largely used thematic saturation to determine the sample size, and this could have made the sample slightly smaller. The study only involved the perspective of physicians and government representatives. More research is required to evaluate perception, knowledge and use of CAM therapies among patients. This would aid in understanding the role of the patient in the integration of CAM into mainstream medicine, and identifying their needs when policymakers formulate strategic plans for such integration.

Mixed-method research has inherent limitations. The researcher can easily tamper with study results when the particular best practices of both qualitative and quantitative inquiry are not considered. Processes such as sampling are especially prone to be corrupted in

mixed research, for instance when only a few interviews are conducted to evaluate quantitative data. This may have the opposite effect and actually dilute the quantitative data. The current study's focus on physicians and stakeholders in only three regions may limit transferability, but the researcher counteracted this limitation by conducting comprehensive interviews, and setting a higher standard for saturation to ensure all relevant themes regarding the research questions were addressed.

Lastly, the selection of physicians represented a limitation because it was done through human resources, and the researcher had no control over the process. This may raise issues concerning the reliability of the methodology, which may extend to the validity of the findings due to questionable sampling and recruiting methods. Hand picking interviewees with preformed opinions and judgments about the study objectives may lead to results that are biased and weaken the strength of the data. It is imperative that the researcher is in control of all the processes involved in a study, to make an authoritative data analysis and conclusion. Gaps in the control processes of a study weaken the theoretical and empirical framework used to support the validity of the findings, leading to unsupported conclusions and recommendations.

The data collection process was not without challenges, most of which were cultural. Considering the then-conservative nature of Saudi society, movement from one place to another was a hindrance, as laws at the time prohibited women from driving. This challenge was particularly pronounced when the researcher had to travel to the south of Saudi Arabia to interview certain respondents. She was forced to use air transport to this region and then liaise with friends in the MOH to find a male driver to provide transportation services. Another cultural hindrance was the difficulty of getting male respondents to agree to an interview; the most affected were of Saudi origin. The solution was to interview these respondents in the company of a supervisor, which might have caused discomfort for the

respondents and prevented them from speaking truthfully. In some instances, the one-on-one interviews were conducted in an open area, which may have compromised privacy and confidentiality.

Fortunately, much has rapidly changed in Saudi society, most notably the government's decision to repeal the ban on driving for women. Another change is that the society is becoming less conservative than before; during the researcher's visit this year, she was surprised to find couples walking in public and kissing during a David Guetta concert. Under the current conditions, this research would not have experienced the cultural challenges it did.

Another challenge – though unrelated to culture – was the apprehensiveness of non-Saudi doctors. The researcher encountered difficulty in convincing non-Saudi respondents to participate in the study. This apprehensiveness was due to the fear of reprisals for comments made in the interviews; according to most of the non-Saudi respondents, these reprisals could include loss of employment and work permit. The researcher assured them that their identities would be kept confidential and anonymous.

Chapter 4: Survey Analysis

Chapter Four: Survey Analysis

## 4.1. Data analysis

Data were entered and analysed using SPSS. Data generated were analysed using crosstab analysis with chi square to test statistical significance and whether the variables were independent. Data were verified by a second person for accuracy.

## 4.2. Results

Physicians at the hospitals that agreed to this study were targeted to participate. Questionnaires were mailed to 500 physicians. Of these, 165 completed the questionnaire – a 33% response rate. The respondents were 114 men (69.1%), 50 women (30.3%), and one who did not disclose their sex (0.6%). The distributions of origin, religion, age group and years of experience are shown in Table 4.1.

Table 4.1. Demographics of physicians.

| Category | Frequency | Percentage |
|---|---|---|
| **Origin** | | |
| Saudi | 57 | 34.5 |
| Asian | 47 | 28.5 |
| North African | 48 | 29.1 |
| Rest of Africa | 12 | 7.3 |
| No response | 1 | 0.6 |
| **Religion** | | |
| Muslim | 160 | 97.0 |
| Christian | 1 | 0.6 |
| Buddhist | 1 | 0.6 |
| Other | 1 | 0.6 |
| No response | 2 | 1.2 |

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| | | |
|---|---|---|
| **Age group (years)** | | |
| 21–29 | 43 | 26.1 |
| 30–39 | 74 | 44.8 |
| 40–49 | 33 | 20.0 |
| 50–59 | 14 | 8.5 |
| 60 or older | 1 | 0.6 |
| **Years of experience** | | |
| 0–2 years | 35 | 21.2 |
| 3–6 years | 44 | 26.7 |
| 7–14 years | 51 | 30.9 |
| 15 or more years | 35 | 21.2 |
| *Total* | *159* | *100.0* |

Most respondents were male and had over ten years of experience practising medicine. This puts these men in their late 30s (74%), but also places them as a group of physicians where knowledge about CAM may not have been a part of their schooling, or they may have been too young to appreciate this knowledge.

Another striking variable is religion. Ninety-seven percent of respondents classified themselves as Muslim. This is not shocking in terms of environment and context, but may suggest inability to see outside of the values and beliefs related to the ideologies of Islam. The fact that 31% of the physicians who responded were women may be seen as progressive for Saudi Arabia. The Quran and its frameworks value education for all of Allah's people, so the fact that 31% were women is favourable, but also shows slow integration of change.

Further knowledge is clearly needed about CAM and its benefits in the form of retraining to inspire better data returns. The questionnaire analysis focuses on the WHO guidelines for CAM integration: safety, efficacy and quality.

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4.3. CAM safety

Table 4.2. Views of IM options and safety.

| | Ruqya | Hijama | Exorcism | Spiritual healers |
|---|---|---|---|---|
| Extremely unsafe | 2.4% | 3.5% | 26.3% | 16% |
| Mostly unsafe | 4% | 19.7% | 28.1% | 30.1% |
| Somewhat safe | 12.6% | 37% | 24% | 39.7% |
| Mostly safe | 25.9% | 33.5% | 6.8% | 9.6% |
| Extremely safe | 55.2% | 6.4% | 4.8% | 4.5% |

As shown in Table 4.2, most participants felt Ruqya is safe, with 55.2 % of them believing it is extremely safe. Hijama was considered somewhat safe, while exorcism and visiting spiritual healers were considered mostly unsafe. The physicians clearly placed value on methods that can be measured in concrete capacities and lack mystical elements. They place large value on the option of Ruqya but no value on exorcism, which is generally not practised in eastern religions. By the physician labelling Ruqya as extremely safe, patients can remain open to trying this option, because they trust the insight of their physician and will tend to judge the standard of care from these opinions.

Table 4.3. Views of safety of CAM practices.

| | Massage | Acupuncture | Chiropractic | Osteopathy | Hypnotherapy | Other CAM |
|---|---|---|---|---|---|---|
| Extremely unsafe | 3.6% | 0% | 4.3% | 11.1% | 13.6% | 15.3% |
| Mostly unsafe | 8.3% | 11% | 22.1% | 19.4% | 17.5% | 31.5% |
| Somewhat safe | 24.9% | 59.7% | 55.7% | 53.5% | 35.7% | 34.2% |
| Mostly safe | 49.7% | 28.6%. | 13.6% | 12.5% | 32.5% | 16.2% |
| Extremely safe | 13.6% | 6% | 4.3% | 3.5% | 0.6% | 2.7% |

From Table 4.3, it is clear that most participants believed CAM practices are somewhat safe, though many are not regarded as completely safe. The fact that massage, acupuncture and chiropractic all scored at the median of safety as ‘somewhat safe’ and ‘mostly safe’ suggests that physicians are somewhat cautious in recommending these options, even though in most western contexts they are considered relatively non-invasive and beneficial to overall wellbeing (NHS, 2014). Interestingly, only a small number of physicians (13.6%) perceived massage to be ‘extremely safe’, when it is relatively common practice worldwide and a highly effective form of relaxation and mind-body balancing if performed by professionals (Ernst, 2003).

In terms of data, this suggests that physicians in Saudi Arabian hospitals are not completely on board with including holistic forms of treatment options. Further research (stage two) addresses whether this has more to do with lack of knowledge or experience with CAM, or with cultural norms and traditions. Part of the concern is that lack of confidence in even the least invasive forms of CAM will make integration difficult. The range of responses from physicians discussing the safety of lesser-known forms of CAM such as osteopathy, hypnotherapy, other CAM (Table 3) and spiritual healers (Table 2) was the same as for CAM therapies with more visibility and acceptance. Osteopathy and hypnotherapy scored higher than spiritual healers and other CAM in terms of being ‘somewhat’ safe. Part of the issue remains the amount of knowledge these physicians may or may not have about alternative therapies, but the fact that spiritual healing scored higher than hypnotherapy (39% and 35.5% respectively), Ruqya scored higher than massage (55.2% and 13.6% respectively) and Hijama scored higher than acupuncture (33.5% and 28.6% respectively) shows a certain amount of faith in religious ritual. This data suggests that physicians allow their religious belief systems to help guide their choices in making educated decisions about alternative options for care. This may be guided by deeper principles and frameworks introduced to them through the

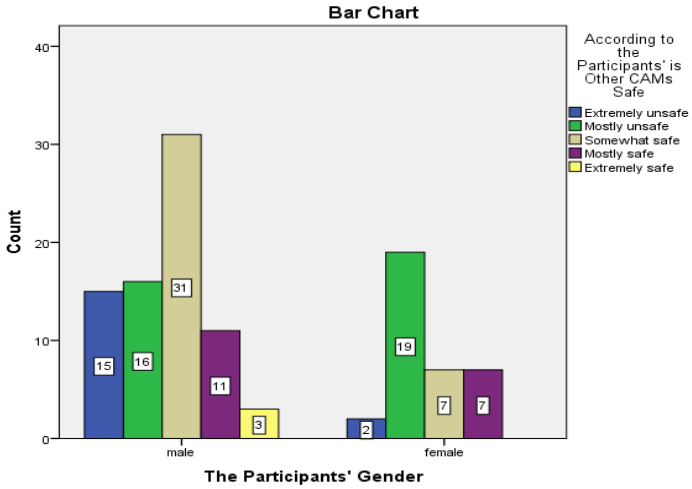
Muslim religion. They may tend to trust the ability of spiritual healers (39.7% somewhat safe), even believe this healing process to be safer than other CAM (34.2% somewhat safe) and western methods such as osteopathy (53.5% somewhat safe) and hypnotherapy (35.7% somewhat safe). They will trust in conventions that they understand based on previous experience before trusting outside knowledge.

## 4.4. Safety analysis

The analysis showed significant associations between participant gender, origin and age group, and perception of the safety of some IM and CAM. Therapies highlighted below represent statistically significant data where differences were observed. All the tables exploring origins show low numbers in a high proportion of the categories, so the test is less reliable.

### *Other CAM safety and participants gender*

As shown in Table 4.4, the crosstab for gender shows some differences in the distribution of participant views, with women more likely to view other CAM as unsafe and men more likely to suggest they are safe. This is supported by the chi square statistic, which shows that this difference was statistically significant (p=0.003).




| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Other CAM safety and gender | Male | 19.7% | 21.1% | 40.8% | 14.5% | 3.9% |
| | Female | 5.7% | 54.3% | 20% | 20% | 0% |

Table 4.4, Other CAM safety and participants gender

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*Ruqya safety and participant origins*

Table 4.5 shows that 6.3% of the participants believed that Ruqya is extremely unsafe to mostly unsafe, 9.5% of them Asian and the rest North African. Ruqya is recitation from the Quran and the Prophet Mohammed's prayers used for healing and protection. Participants might have misinterpreted the term Ruqya, or thought practising Ruqya could lead the patient to avoid biomedicine. All of the Saudis and other African respondents believed it is somewhat safe to extremely safe. The difference between Saudi and other origins was significant at (p=0.000).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Ruqya safety and participant origin | Saudi | 0% | 0% | 9.1% | 31.8% | 59.1% |
| | Asian | 3.2% | 6.3% | 15.9% | 44.4% | 30.2% |
| | North Africa | 3% | 3% | 15.2% | 9.1% | 69.7% |
| | Rest of Africa | 0% | 0% | 0% | 18.2% | 81.8% |
| | Others | 0% | 100% | 0% | 0% | 0% |

Table 4.5. Ruqya safety and participant origins

*Osteopathy safety and participant origin*

As shown in Table 4.64, most Saudis (36.8%) thought osteopathy is mostly unsafe, while participants of most other origins believed it is somewhat safe. The difference was statistically significant (p=0.000).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Osteopathy safety and participant origins | Saudi | 0% | 36.8% | 26.3% | 26.3% | 10.5% |
| | Asian | 0% | 4.8% | 83.3% | 11.9% | 0% |
| | North Africa | 16.7% | 30% | 41.7% | 6.7% | 5% |
| | Rest of Africa | 22.7% | 4.5% | 54.5% | 18.2% | 0% |
| | Others | 100% | 0% | 0% | 0% | 0% |

Table 4.6. Osteopathy safety and participant origin

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*Hypnotherapy safety and participant origins*

A shown in Table4.7.4, 47.6% of Saudi participants and 32.2% of North Africans believed hypnotherapy is mostly safe, while 51.9% of Asians and 47.6% of other Africans believed it is somewhat safe. This difference was statistically significant (p=0.002).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Hypnotherapy safety and participant origin | Saudi | 0% | 24.3% | 38.1% | 47.6% | 0% |
| | Asian | 1.9% | 17.3% | 51.9% | 28.8% | 0% |
| | North Africa | 28.8% | 20.3% | 16.9% | 32.2% | 1.7% |
| | Rest of Africa | 14.3% | 9.5% | 47.6% | 28.6% | 0% |
| | Others | 0% | 100% | 0% | 0% | 0% |

Table 4.7. Hypnotherapy safety and participant origins

*Spiritual healer safety and participant origin*

Table 4.84 shows that most Saudis, Asians and other Africans believed that visiting spiritual healers is somewhat safe, while most North Africans thought it is mostly unsafe. This difference was statistically significant (p=0.000).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Spiritual healer safety and participant | Saudi | 0% | 26.3% | 36.8% | 15.8% | 21.1% |
| | Asian | 5.8% | 26.9% | 44.2% | 17.3% | 5.8% |
| | North Africa | 24.2% | 38.7% | 33.9% | 3.2% | 0% |

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|---|---|---|---|---|---|---|
| origin | Rest of Africa | 31.8% | 18.2% | 50% | 0% | 0% |
| | Others | 0% | 0% | 0% | 100% | 0% |

Table 4.8. Spiritual healer safety and participant origin

*Ruqya safety and participant age group*

As shown in Table 4.94, participants were more likely to say Ruqya is somewhat safe with increased years of experience. Younger, less experienced practitioners viewed Ruqya as being more safe than do more experienced staff. This difference was statistically significant (p=0.001).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Ruqya safety and participant age group | 30–39 | 5.7% | 7.1% | 10% | 17.1% | 60% |
| | 40–49 | 0% | 3.4% | 10.3% | 20.7% | 65.5% |
| | 50–59 | 0% | 0% | 21.4% | 50% | 28.6% |
| | 60+ | 0% | 0% | 0% | 0% | 10% |

Table 4.9. Ruqya safety and participant age group

*Hijama safety and participant age group*

Table 4.104 shows that younger doctors believe that Hijama is somewhat safe. The opinion among older age groups varies between mostly safe and mostly unsafe. This difference was statistically significant (p=0.004).

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Hijama | 30–39 | 5.7% | 12.9% | 38.6% | 30% | 12.9% |



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| | | | | | | |
|---|---|---|---|---|---|---|
| safety and participant age group | 40–49 | 3.3% | 16.7% | 40%3 | 36.7% | 3.3% |
| | 50–59 | 0% | 38.5% | 23.1% | 8.5% | 0% |
| | 60+ | 0% | 0% | 100% | 0% | 0% |

Table 4.10. Hijama safety and participant age group

*Exorcism safety and participant age group*

Table 4.~~4~~ 11 shows a tendency of participants aged 40–49 to view exorcism as less safe than did the younger groups and those aged 50–59. Those aged 60 and over were most sceptical about the safety of exorcism, though numbers were very low in this group. The differences were statistically significant (p=0.001), but the low numbers in some groups might make this statistic less robust.

| | | Extremely unsafe | Mostly unsafe | Somewhat safe | Mostly safe | Extremely safe |
|---|---|---|---|---|---|---|
| Exorcism safety and participant age group | 30–39 | 41.4% | 24.1% | 20.7% | 6.9% | 6.9% |
| | 40–49 | 20.8% | 25% | 41.7% | 12.5% | 0% |
| | 50–59 | 41.7% | 41.7% | 8.3% | 0% | 8.3% |
| | 60+ | 100% | 0% | 0% | 0% | 0% |

Table 4.11. Exorcism safety and participant age group

4.5. Statistical evaluation of CAM effectiveness

Table 4.12. Views of IM efficiency.

| | Ruqya | Hijama | Exorcism | Spiritual healers |
|---|---|---|---|---|
| Most effective | 55.4% | 36% | 0% | 3.2% |
| Not effective | 44.6% | 64% | 100% | 96.8% |

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As shown in Table 4.12, more than half the participants (55.4%) believed that Ruqya is the most effective type of IM, and all the participants thought exorcism is not effective. Hijama and visiting spiritual healers were mostly considered not effective.

Table 4.13. Views of CAM efficiency.

| | Massage | Acupuncture | Chiropractic | Osteopathy | Hypnotherapy | Other CAM |
|---|---|---|---|---|---|---|
| Most effective | 26.9% | 25.3 | 3.8% | 5.4% | 2.7% | 2.7% |
| Not effective | 73.1% | 74.7% | 96.2% | 94.6% | 97.3% | 97.3% |

Table 4.13 shows that most of the participants did not believe in the effectiveness of CAM. Massage and acupuncture scored higher on the effectiveness scale than all other CAM therapies.

4.6. CAM effectiveness and participant age and origin

Data is only presented where there was statistical significance.

Table 4.14. CAM effectiveness and participant age and origin.

| | | **Most effective** | | **Not effective** | | **p-value** |
|---|---|---|---|---|---|---|
| | | **n** | **%** | **n** | **%** | |
| Ruqya effectiveness and participant origin | Saudi | 20 | 80% | 5 | 20% | 0.000 |
| | Asian | 23 | 32.9% | 47 | 67.1% | |
| | North African | 42 | 61.8% | 26 | 38.2% | |
| | Other African | 18 | 81.8% | 4 | 18.2% | |
| | Others | 0 | 0% | 1 | 100% | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Acupuncture effectiveness and participant origin | Saudi | 8 | 32% | 17 | 68% | 0.000 |
| | Asian | 7 | 10% | 63 | 90% | |
| | North African | 32 | 47.1% | 36 | 52.9% | |
| | Other African | 0 | 0% | 22 | 100% | |
| | Others | 0 | 0% | 1 | 100% | |
| Ruqya effectiveness and participant age group | 30–39 | 54 | 73% | 20 | 27% | 0.000 |
| | 40–49 | 34 | 51.1% | 32 | 48.5% | |
| | 50–59 | 15 | 35.7% | 27 | 64.3% | |
| | 60+ | 0 | 0% | 4 | 100% | |
| Hijama effectiveness and participant age group | 30–39 | 35 | 47.3% | 39 | 52.7% | 0.000 |
| | 40–49 | 22 | 33.3% | 44 | 66.7% | |
| | 50–59 | 6 | 14.3% | 36 | 85.7% | |
| | 60+ | 4 | 100% | 0 | 0% | |
| Acupuncture effectiveness and participant age group | 30–39 | 13 | 17.6% | 61 | 82.4% | 0.001 |
| | 40–49 | 28 | 42.4% | 38 | 57.6% | |
| | 50–59 | 6 | 13.3% | 36 | 85.7% | |
| | 60+ | 0 | 0% | 4 | 100% | |

Most interestingly, Ruqya, acupuncture and Hijama had a strong association with participants' years of experience, nationality and gender. As shown in Table 7, most participants believed Ruqya is the most effective IM, except Asians, 67.1% of whom believed it is not. Of North African participants, 47.1% believed acupuncture to be the most effective, while 68% of Saudis and 90% of Asians thought it is not the most effective treatment. Younger participants believed that Ruqya and Hijama are the most effective treatments. Middle-aged participants (40–49) believed in the effectiveness of acupuncture, while most

other age groups believed it is not an effective treatment. The differences are statistically significant ($p \leq 0.001$)

4.7. CAM quality

The next two tables show participant views of the quality of CAM and IM available in Saudi Arabia with regard to side effects and treatments.

Table 4.15. Views of IM quality.

| | Ruqya | Hijama | Exorcism | Spiritual healers |
|---|---|---|---|---|
| Treated from side effects | 5.4% | 24.2% | 9.1% | 2.7% |
| Most side effects | 5.4% | 32.8% | 27.4% | 15.1% |
| Did not treat side effects | 94.6% | 75.8% | 90.9% | 97.3% |
| Does not have side effects | 94.6% | 67.2% | 72.6% | 84.9% |

Table 4.15 suggests that most participants did not treat side effects and did not believe in the side effects of Ruqya. Most believed that Hijama does not have side effects and therefore did not treat any. However, the fact that 24.2% of participants underwent treatment for the side effects of Hijama indicates that the quality of Hijama is somewhat low. Most participants did not undergo treatment for any side effects of exorcism or visiting a spiritual healer. This could be an indication of the quality of treatments, but it could also mean that patients do not report to doctors who do not share their religious beliefs. 27.4% believed that exorcism has substantial side effects, but only 9.1% of them underwent treatment for side effects.

Table 4.16. Views of CAM quality.

| | Massage | Acupuncture | Chiropractic | Osteopathy | Hypnotherapy | Other CAM |
|---|---|---|---|---|---|---|
| Treated from side effects | 7% | 3.8% | 4.8% | 5.4% | 1.1% | 21.5% |
| Most side effects | 5.9% | 11.8% | 10.2% | 11.3% | 6.5% | 5.4% |
| Did not treat side effects | 93% | 96.2% | 95.2% | 94.6% | 98.9% | 78.5% |
| Does not have side effects | 94.1% | 88.2% | 89.8% | 88.2% | 93.5% | 94.6% |

As shown in Table 4.16, most participants did not receive treatment for CAM side effects. This could be an indication that CAM treatments have a better quality than IM. Participants did not believe in the safety or effectiveness of CAM, but they believed that the quality of CAM is much better than that of IM.

## 4.8. Discussion

The questionnaire was informed by the WHO TM policy (2002–2005) covering three main themes: safety, efficacy and quality. The return rate of complete responses was 33%. Baruch and Holtom (2008) stated that the average response rate for studies using data collected from organisations was 35.7%. This may mean the structure of the questionnaire was carefully worded to engage active participation (Fink, 2012). It could also truly reflect how intrigued participants were about CAM integration as a medical tool. The degree of survey fatigue in a society, social cohesion, and public attitude towards the survey industry can have an impact on response rates (Fan & Yan, 2010).

Chapter 4: Survey Analysis

The data available from physicians in Saudi hospitals represents little integration of CAM options within the standards for health care systems in the country. Most responses showed use of only three primary forms of CAM, which may also represent the acceptable level of use for CAM options at this time within the context of the hospitals surveyed. This data is only valid in the context of the hospitals surveyed. Other hospitals may have better diffusion of CAM and allow for more proactive acceptance of CAM as a widely used medical tool. Surveying doctors at other hospitals of the same size and standards of care would be of interest to pursue. Such a survey may reflect different values or possibly the same outcomes. A complete survey of CAM use and known thresholds of acceptability within safety ranges is justified. This limited range of data from the hospitals used in the study only shows a small view of the situation for CAM acceptance in this specific environment. Part of the issue is that CAM can also include other forms of treatment that are more widely accepted, but may not be fully defined as CAM. For instance, the use of herbal supplements is indeed complementary to other forms of treatment; data provided for this specific CAM may be invalid because success can be attributed to modern treatment as opposed to CAM. Success or even failure can be attributed to the use of both methods, but data cannot separate this interaction.

A remaining issue in analysis of this data is that the questionnaire was designed to capture participant views on CAM in the hospital setting. Examining physicians' specific views may have hindered the process of truly discussing CAM. Possibly the participants should have been patients instead of doctors. Understandably, there is the need and desire to seek results based in the clinical setting to support integration, but outside use of CAM by the patient may take place unbeknownst to the physician. The patient may not report use of CAM and other alternative options for fear of the traditional practitioner rejecting its validity. Further research is warranted into the patient experience and the need for seeking social

degrees of use to understand the threshold for acceptance of holistic medicine. This data would benefit the system by setting a standard toward further innovation of different options, and contribute to further integration of these options as trusted sources of treatment.

When participants were asked about acupuncture, regression showed a positive correlation with multiple variables. A positive response was also statistically high when participants were asked about recommending CAM. This shows that patients may be looking to CAM for options and that doctors ask patients about IM. The results suggest further dialogue, and that professionals are growing more comfortable with recommending CAM as a valid form of treatment and an element of medical strategies. The perception of acupuncture as an accepted form of CAM was higher because the treatment was seen as safe and effective. Participants were knowledgeable about some forms of CAM, but not all, and focused on acupuncture and massage as safe and effective forms to suggest to patients. Surveys investigating physicians' perception in the UK also show acupuncture as a more common form of CAM recommended for use by patients (Posadzki, Alotaibi, & Ernst, 2012).

When participants were asked if they had used any form of CAM, the rate of positive response was statistically high. This suggests that CAM is becoming more accepted by these participants. A previous study in the UK showed a high rate of physicians using CAM and referring patients to CAM practitioners (Lewith, Hyland, & Gray, 2001). It also suggests that participants are seeking different forms of medicine outside of the traditional medicine they have been taught. The fact that they have actively used a form of CAM also shows how the market has grown flexible to these options. According to the NCCAM (2009), Americans spend $33.9 million out of pocket on CAM.

The results illustrate great progress toward introducing CAM as it relates to traditional forms of medicine the participants are familiar with. The data regressions performed focused

primarily on the acceptance and popularity of acupuncture. Acupuncture is generally the best CAM method when used in conjunction with conventional medicine. Further examination of data from participants uncovers further highlights of their behaviours within this understanding of acupuncture. The regression particularly highlights how important safety remains in relationship to trust, and how this may also increase belief in the treatments as a whole. Safety is important to the supportive network that the participant is a part of, but belief in safety also increases integration of the system.

This survey suggests that physicians consider acupuncture the safest form of CAM available. Physicians who use CAM were more apt to recommend it to friends and family members. They felt an association with the use of CAM such as acupuncture was not negative, and this lends itself to a deeper understanding of CAM for the patient.

The data also seems to distinguish the use of Middle Eastern CAM as more acceptable than western forms. While physicians were accepting of CAM, western forms such as hypnotherapy scored lower in terms of recommendations in relation to safety and effectiveness when compared to non-western forms such as Hijama. This may reflect a segment of participants who are actively engaging patients in dialogue about CAM using culturally accepted forms to create awareness. This means that the items under investigation had a statistically significant impact on practitioner choice to use CAM. This survey reflects that physicians have a positive attitude toward CAM practices they recognise as culturally familiar. As AlBedah, El-Olemy and Khalil (2013) wrote, “In Saudi Arabia, Tibbu Nabawi or prophetic medicine is broadly accepted and practiced by most physicians and the public.” This suggests how tightly woven into the culture beliefs are in this setting. One must consider how belief systems affect the shaping of perceptions of the knowledge, tools and usefulness of options provided by medicine. This implies, as does much of the results of this study, that tradition and religion play a close role in the medical profession in Saudi Arabia at these

specific hospitals. Whether this is a cultural phenomenon or purely related to the views of the specific participants remains to be seen without additional survey of other hospitals.

Knowing this perception exists allows for research to devise applicable strategies for general diffusion of CAM, using IM as a bridge to narrow the gaps in knowledge. Belief in IM suggests how close the physicians in this study are growing to accept other forms of treatment as viable options for their patients. In terms of diffusion, the Islamic or traditional form of CAM is accepted and integrated, allowing western forms to follow, which creates access to a new dimension of care. Furthermore, in terms of patient care this opens the door for the patient to have further options.

Ajzen (2005) wrote that belief is born out of early cognitive experiences. How a person relates to their environment and the acceptable belief systems in that environment directly impacts how they view the world around them. Perception of CAM and the ability to accept forms of CAM for patient use may not even come from a place of intelligence or knowledge. A physician can be highly trained but still not see the value in some forms of their training if their belief system suggests otherwise. Ajzen described how beliefs and traditions from familial foundations and continued relationships may cause people to act to simulate those belief systems and values, even once those experiences and relationships are long past. In relation to IM and acceptance of western CAM, this seems to also suggest that perception forms and remains loyal to those first life experiences. Ajzen's theory shows how the basis for preconceived notions and bias is formed within the intellect. The idea that early exposure to experiences outside the norm of the identified culture may create a way for the individual to be more open or flexible to outside ideas remains untested, but the literature suggests that this may act as a bridge for diffusing change.

With this in mind, and looking at how demographics may actively influence the participant's openness to the survey and then discussion of CAM, one must also consider how perception formed by ideological views impacts the ability to form an accurate recommendation for the patient. One must consider the source and amount of bias the physician may create when discussing options for treatment outside the traditional realm. While some physicians may seek to promote wellbeing, others may seek to ensure the patient must return for treatment over and over. Holistic medicine and moving toward a standard of care that seeks a combination of tools may not work for the physician's care strategy if the desired outcome is to have the patient returning for further treatment. However, research returns to the basis of how traditional forms of CAM hold up to western forms in terms of how the physician perceives the value of traditional forms of CAM. The survey suggests that physicians in this hospital context seek traditional forms of CAM over western forms. However, one must consider how mainstream western versions of CAM have become that can also be considered eastern. Further research may be needed to distinguish whether this plays a role in recommending forms of CAM such as acupuncture or massage that can be perceived as having Asian or eastern origins, yet are highly accepted in the west.

Izzo and Ernst (2001) and DiBleisi et al. (2001) have noted that for the whole system, including CAM, to work effectively, the tools used must be trusted and valued. In this way, wellness may be attributed to a holistic balance, but if this is not achieved it may have more to do with the patient's perception of the physician's trust in the treatment. If massage, acupuncture and chiropractic are not accepted fully as tools to influence wellness for the physician to recommend to patients, the patient may be unlikely to use them unless they have other means of garnering trust in these options. This is one reason why other forms of CAM such as osteopathy, hypnotherapy and spiritual healing receive little research attention, as they score low on the safety scale of physicians who do use these methods. Within these

hospitals, little awareness of these options means that services in the health care system are not being properly integrated for widespread use. The physician's failure to create knowledge about different options that may be labelled as alternative may be directly related to their attitude toward seeking innovative solutions to the patient's care and wellness (Al Mutair et al., 2014). To believe the physician would lack consideration for CAM options is not farfetched, considering the medium range toward safety beliefs. Failure to embrace different options not only harms the integration process but also the wellness potential of each patient.

The practices under investigation had a statistically significant impact on the perceptions and attitudes of practitioners toward integrating CAM into health care. This reflects a belief that IM should be integrated into the health care system, as the participants responded at a high rate of return. IM may be more socially accepted over western CAM, but it can also offer a means of introducing CAM in general to patients and into the system as valuable methods of augmenting conventional treatments.

Data analysis revealed a connection between acceptance of IM and awareness of the NCCAM. There is high recognition in the response with respect to IM and CAM. Data also supports awareness of CAM and the role of the participants' workplaces. Data suggests the prevalence of useful means of spreading awareness about CAM and acceptance. The use of CAM as a spotlighted form of alternative medicine in seminars and pamphlets as well as other devices of social awareness seems high, which reflects further diffusion. However, this also shows how actively patients are getting their information about CAM and IM. Data shows that participants understand how awareness can be achieved and that public perception is changing about forms of CAM.

Notably, findings suggest that patients are hesitant to refuse medical strategies in general. Patients are aware of the need for treatment of their conditions. From participant

perceptions of their patients, IM seems safer, more effective and higher quality than CAM. Both CAM and IM were accepted by participants as options and part of the treatment strategy, further reflecting not only integration of services but also how options are becoming more accepted. Participants from this point of view seemed accepting of IM, which is not surprising considering previous data. Furthermore, regression data results show that these participants encountering patients using CAM particularly perceived acceptance toward IM. These encounters take place often and are growing in prevalence. Homeopathy seems to be slowly becoming accepted more, as other forms of western CAM such as massage are also being accepted as augmentations to treatment. This means that many participants are encountering patients who choose mainstream medicine but also see the value of CAM as treatment that may aid in quality of life and in enhancing the quality of conventional medicine. Participants see these forms of treatment as safe and recommend them to patients in a way that seeks to offer a holistic approach to health care.

Chapter 5: Physician Interviews

Chapter Five: Physician Interviews

Thirty medical doctors from different parts of Saudi Arabia were interviewed for this study. Interview questions ranged from the doctors' perception of the effectiveness of CAM and IM to their awareness of the regulatory framework guiding and overseeing the use of CAM in Saudi Arabia. The interview questions can be broadly categorised into these main questions:

1. Have you encountered patients using CAM or IM?
2. What do you think about CAM and IM?
3. How safe do you think CAM and IM are?
4. Have you ever discussed CAM or IM with your colleagues?
5. Do you think the MOH should regulate CAM and IM?
6. How would you feel if a CAM or IM practitioner were practising within your workplace?
7. Have you encountered any kind of awareness material (such as leaflets) about CAM or IM?
8. Have you encountered a patient who stopped biomedicine for CAM or IM?
9. Have you heard about the NCCAM?

The data gathered from the interviews were statistically analysed using NVivo. The findings were analysed based on the main themes of the interview questions.

5.1. Personal (demographic) data

This section of the interview questions was concerned with respondent age, nationality, religion, region(s) of practice, and duration of professional experience, whether in

public or private hospitals. While the demographic data was not a primary component of the study, it was valuable in providing context to the findings and in arriving at suitable recommendations to facilitate the effective integration of CAM and IM with biomedicine to deliver holistic care within Saudi Arabia's health care system.

5.2. Respondent age

The study participants were asked how old they were at their last birthday. Table 1 below shows respondents' ages at the time of completing the interview questions:

| **Age** | **Frequency** | **Percentage** |
|---|---|---|
| 20–24 | 2 | 6.67 |
| 25–29 | 17 | 56.67 |
| 30–34 | 7 | 23.33 |
| 35–39 | 1 | 3.33 |
| 40–44 | 2 | 6.67 |
| 45–49 | 1 | 3.33 |
| *Total* | *30* | *100.00* |

Table5.1

Ages ranged from 24 to 48 years, with most between the ages of 25 and 29.

5.3. Nationality and religion

Of the 30 study participants, 17 were of Saudi nationality, two were Pakistani, two Yemeni, one Sudanese, one American, one from Turkistan, one Jordanian, three Egyptian and two Syrian. All the doctors interviewed for this study were Muslim, which represents the predominant religious background in Saudi Arabia. It is also worth noting that 10 doctors each from the regions of Makkah, Riyadh and Aseer participated in this study, to provide an opportunity for generalisation.

*Professional experience*

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The respondents were asked about their level of professional experience and whether they had practiced in a private or public hospital setting. Table 2 below shows respondents' levels of experience at the time of responding to the interview questions.

| **Professional experience (years)** | **Frequency** | **Percentage** |
|---|---|---|
| 1–5 | 19 | 63.33 |
| 6–10 | 7 | 23.33 |
| 11–15 | 3 | 10.00 |
| 16–20 | 1 | 3.33 |
| *Total* | *30* | *100* |

Table5.2

Duration of professional experience ranged between one and 20 years, a spectrum that allowed capturing the perceptions of both new and older, more experienced doctors with regard to the safety, efficacy and quality of CAM and IM and their integration with biomedicine. Most respondents had professional experience in the range of one to five years, and only one respondent had practiced for 20 years. Younger, less experienced doctors may have significantly different perceptions of the safety, efficacy and integration of CAM and IM than more experienced doctors.

5.4. Summary of personal (demographic) data

This section described the respondents' age, nationality, religious background and duration of professional experience. Most were aged between 25 and 29 years (56.67%), Saudi (56.67 %), and with professional experience in the range of one to five years (63.33%).

5.5. Efficacy of CAM and IM

The theme of efficacy was addressed through six questions.

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*Encounters with patients using CAM and IM*

Respondents were asked about this topic to identify the general predisposition toward CAM of patients coming to public and private hospitals. This was supported or followed by the question, "Have you asked patients if they use CAM or IM?" This latter question was asked to evaluate whether doctors consider CAM and IM as relevant to ask patients about, either as part of inquiry into their medical history or as something that the doctor would potentially recommend alongside biomedical treatments. Frankel and Borkan (2003) recommended that doctors routinely ask their patients about their use of CAM to provide them with evidence-based care and optimise health care outcomes.

In all three regions, most doctors had encountered very few or no patients who used CAM or IM. Only a few doctors said they had encountered a significant percentage of patients (50% or more) who used CAM. However, many did ask patients about their use of CAM and IM. Those with reservations about engaging patients about their use of CAM answered the question "Have you asked patients if they use CAM or IM?" with responses such as:

*"I'm not an expert so I don't advise and I don't ask them." (1.1)**[1]

*"No, I normally ask about his medical background." (1.3)**

*"Only family." (2.1)**

*"No, but I might if the patient tried biomedicine and failed." (2.5)**

*"Only patients I have a personal relationship with, but I've never asked my patients." (2.6)**

*Perception of CAM and IM*

*Appendix 2

Chapter 5: Physician Interviews

Questions were asked about perception to investigate doctors' attitudes toward CAM in view of their knowledge and practice of biomedicine. Maha and Shaw (2007) observed that doctors' perception of CAM and its efficacy can have implications for doctor–patient communication. By supporting more open communication, doctors' concerns about CAM can be effectively addressed, or their perceptions altered through knowledge of treatments or therapies patients need or are already using. Providing CAM to patients could enhance the range of treatment choices available to them and support the role of the doctor in providing optimal care.

When asked "What do you think of CAM or IM?", 17 out of the 30 doctors supported the use of CAM and associated religious practices but were not sure about the efficacy of such treatment. The lack of certainty among most respondents was expressed in answers such as:

> *"It depends on the case but sometimes it has benefits; especially the Ruqya and Hijama are proven to have benefits by the prophet's hadith and the Quran." (1.3)**

Others related efficacy to concerns over safety:

> *"They are good but there are no facilities in Saudi, that's number one. Number two: equipment's hygiene are not good, for example when I do Hijama I'm not sure it is clean, so I'm doubting and afraid for my safety plus the practitioner who is doing Hijama or Kay or massage. I'm not sure if he is healthy or has a medical problem like hepatitis C." (1.4)**

Many trusted the efficacy of religious medical practices but were largely unsure about the efficacy of CAM:

> *"I do not have a problem with Hijama, but other practices, we should not start with them. We need to go see a doctor; if the patient did not get results then you can use Ruqya and other practices." (1.5)**

> *"There are some good practices like Hijama. We all know this Islamic practice and how beneficial it is but I have no experience in it. On the other hand I've seen people who said they found massage and acupuncture very helpful." (1.6)**

> *"They exist and IMs are mentioned in the holy Quran, so it's proven. Besides, biomedicine originated from CAM practices and herbal medicine. For CAMs I think their effects are momentary and do not last, but for IMs they are mentioned in Quran and therefore I believe in them." (2.4)**

> *"When there are no results of using biomedicine the patient can use IMs, but only if he tried and visited more than one PHC and more than a doctor and there were no results; then the patient can use IMs, especially Ruqya." (2.5)**

For many of the doctors who were somewhat optimistic about the efficacy of CAM and IM, a major concern was the scarcity evidence demonstrating the efficacy and safety of these treatment practices, as espoused by these responses:

> *"They are okay but part of it is playing with people's emotions, like treating diabetes in 40 days, everything is in Allah's hands, but these kinds of practices are wrong, but there is scientific evidence that Hijama works." (1.9)**

> "It can get a good outcome but the problem they are not evidence based." (2.1)*

*"Depends on the practice, some are good and can help alongside biomedicine, but there's also some wrong practices." (2.1)**

Interestingly, out of the 30 respondents, only two were firmly against the use of CAM and IM, expressing unambiguous scepticism over their efficacy. Eleven respondents supported the efficacy of CAM and especially religious-based treatments, with some of the responses being:

*"I don't have a problem with it." (1.5)**

*"CAM and IM complement biomedicine and do not go against it, especially us as Muslims, we need to believe in Ruqya, Hijama, honey and Zamzam. Sometimes there are no medicine except corticosterone in biomedicine, so using CAM and IM might work." (1.7)**

*"I believe in IMs completely and I've seen the good results of them, especially us as pulmonologist, we see people getting better after Ruqya." (1.8)**

*"I think it works." (2.7)**

*"I think it's good but it shouldn't be the only path. Patients can use it as a complementary medicine with biomedicine." (2.8)**

*"I trust IMs completely and if the patient told me that Ruqya worked for them I would encourage them to keep on practising." (3.2)**

Notably, even among respondents who expressed optimistic views of CAM, there was a greater bias for religious treatments such as Hijama and Ruqya than for CAM treatments such as acupuncture, message and homeopathic practices.

Chapter 5: Physician Interviews

5.6. Safety in the use and administration of CAM and IM

Practitioner attitudes toward the safety of CAM and IM practices were assessed. Findings showed that younger doctors tended to be less optimistic about the safety and efficacy of CAM and IM, were more reluctant about the idea of integration, calling for greater evidence-based research, and were less likely to engage patients about CAM or refer them to a CAM or IM practitioner within the hospital setting.

Study participants were asked, "How safe do you think CAM and IM are?" Out of the 30 participants, 10 said these practices were safe, nine said they perceived them to be unsafe, and the remaining 11 were unsure about safety. For the majority of participants, the safety of CAM and IM was uncertain, with most citing questionable expertise, collaboration and integration as major reasons for their uncertainty. This was expressed through responses such as:

> *"If it is practised fully as a spiritual medicine it is not harmful, but back in my country I've seen that spiritual healers and practitioners prescribe medication that contain steel and heavy metal which cause renal failure… I don't force them to go to them and don't force them to avoid them, I just tell them this may harm them if they used the medication prescribed by those people who do not know about what they are doing." (1.2)**
>
> *"Some are safe and some are not. IMs could be safe but some practices like Kay could be dangerous." (1.6)**
>
> *"Depends on the practice; some are safe and some are not. They need regulation." (2.3)**
>
> *"Depends on the practitioner's experience." (2.4)**

> *"Depends on the practice. For example, I've seen a patient suffering from psoriasis, and he went to a practitioner and he gave him an ointment and he was poisoned. I believe practitioners need to work here with us so we can cooperate with." (2.6)**

For many practitioners, expertise and integration are important prerequisites for the safe practice of CAM and IM therapies, as expressed by responses such as:

> *"It depends how it is used. If it was used alongside biomedicine then I think it's safe." (2.8)**

> *"If it was through the Ministry of Health I think it would be safe". (2.9)**

> *"Most practices are safe but some are not. Like IMs, I think they are mostly safe, but Hijama needs guidelines." (3.3)**

> *"It depends on the practice." (3.10)**

> *"I think IM is so safe and CAM needs a specialist. Even massage can cause problems if it was not done by professionals." (1.3)**

> *"There are no guidelines… that is why I don't believe in them, but if there were research or guidelines I can check, I might say they are safe." (1.5)**

> *"If there were more studies about it and it was practised in a suitable place then yes, it would be safe." (1.8)**

Most respondents perceived IM therapies such as Hijama to be safer than CAM practices such as acupuncture. Indeed, respondents' Islamic religious background played a significant role in influencing such perceptions. In particular, when asked the question, "What do you think about CAM and IM?", participants provided answers such as:

> *"I believe in IMs completely and I've seen the good results of them, especially us as pulmonologist we see people getting better after Ruqya." (1.8)**

> *"It depends on the treatments. Hijama is safe, but it could be unsafe if there was infection." (1.8)**

> *"Everything is in Allah's hands, but these kind of practices are wrong, but there is scientific evidence that Hijama works." (1.9)**

> *"I think it would be great if Islamic medicine was used in oncology or terminally ill patients. It will help them with depression and it would be rewarded by Allah Almighty." (2.10)**

> *"They exist and IMs are mentioned in the holy Quran, so it's proven. Besides, biomedicine originated from CAM practices and herbal medicine. For CAMs I think their effects are momentary and do not last, but for IMs they are mentioned in Quran and therefore I believe in them." (2.4)**

A complex link is evident between religion and CAM. Unsurprisingly, religious practitioners are critical of biomedical practices and their long-term efficacy for the treatment of complex clinical conditions. Notably, CAM therapies are largely used for the treatment of chronic conditions and musculoskeletal syndromes. It may be largely expected that those who are religious or spiritual are more drawn toward CAM. However, as the interview responses suggest, some religious people may be critical of some CAM therapies. This means that those who demonstrate greater spiritual openness, and openness to new paradigms, may be more attracted to alternative therapies that are rooted in spiritualism. At the same time, religious individuals may be doggedly sceptical of treatments or therapies linked to spiritual or

religious practices that are different from their own religious beliefs, as is evidenced by this study.

## 5.7. Engaging patients about CAM and IM

Physicians' engagement with patients about CAM and IM was assessed using the question, "Have you ever asked a patient if they use CAM or IM?" This question sought to determine to what extent physicians considered patients' religious and spiritual beliefs, and more importantly, their perception of the role of alternative therapies with regard to safety and efficacy.

Of the 30 respondents, 16 replied positively to the question, while the remaining 14 said they did not ask patients about their use of CAM or IM. Those who answered in the affirmative provided responses such as:

> *"Yes, whenever I take the history of the patient I ask them about these practices." (1.2)*
>
> *"Yes, most of the time I do ask." (2.3)*
>
> *"Yes, I always ask my patients about it." (3.4)*
>
> *"Yes, I asked about IMs and I recommended it, like Ruqya." (3.6)*
>
> *"Yes, as a part of the patient's history." (3.8)*

Those who said they did not speak to patients about the use of CAM or IM provided responses such as:

> *"No, I normally ask about his medical background." (1.3)*
>
> *"Only family." (2.1)*
>
> *"No, but I might if the patient tried biomedicine and failed." (2.5)*

*"Only patients I have a personal relationship with, but I've never asked my patients." (2.6)*

5.8. Quality of CAM and IM: Integration and the role of regulatory bodies

The issue of integration and its implications for safety and quality was assessed by asking study participants their views on integration, working with CAM and IM practitioners, and awareness of the NCCAM. When asked "What do you think of integration?", 28 of the 30 participants said they supported integration of CAM and IM with conventional medicine, with the view that integration would bring greater regulation and therefore improve the quality of CAM and IM practices. Those who supported integration in principle and practice provided answers such as:

*"I think it is a good idea because it will be more controlled and that would reduce the risk." (2.6)*

*"It should be integrated and regulated by the Ministry of Health. It is very random now and it's not working." (1.5)*

*"I think it will make patients seek medicine within the Ministry of Health, so they will take medical treatment and the treatment they believe in from the same place." (1.6)*

Others who supported integration emphasised the need for an evidence-based process of integration to establish the efficacy and safety of CAM. Responses pertaining to these concerns included:

*"I wish that would happen, but it needs to be supported with studies like they did in the university hospital in Jeddah, where they done studies about the black seed." (1.7)*

*"I think it is a good idea and I wish that happens, but I wish they would do more studies before integration, and students can study these practices and specialise in them." (1.8)*

*"I agree if it was based on both scientific and religion values, It has to be evidence based, something that has been tested." (2.11)*

Others saw integration as an effective way of minimising any inherent risks in the practice of CAM. Participants said:

*"I think it would be a good move forward and practices will be more controlled." (2.3)*

*"I think it's a good idea and it can prevent fraud practices." (2.4)*

*"I think it's a good idea because practitioners here do not know the basics of medicine e.g. Hijama, the practitioner could do Hijama for a patient who suffers from anaemia, and that can harm the patient." (2.5)*

*"I think it works if there were regulations that control them." (3.1)*

*"Some practices need to be within the supervision of the Ministry of Health, like acupuncture and Hijama." (3.3)*

*"I hope that will happen. I've seen a lot of wrong practices. I wish we could be more informed as doctors so we can help patients." (3.4)*

Some participants viewed integration as necessary given that patients were already using CAM. Responses included:

*"Why not integrate? I have some patients that would bring herbs or ask about practices, so why not exploring and study it more." (3.2)*

> *"People are already using these practices and I think it is about time for them to be integrated." (3.5)*

Out of the 35 participants, seven did not support the idea of integration, with some simply saying it is not a good idea. Others expressed concerns such as the lack of evidence to support CAM practices, with responses such as:

> *"I do not think it is a good idea because it is not evidence based and there are no publications about it." (2.1)*

> *"It depends on the practice. If the practices are not evidence based, then no." (3.10)*

> *"Islamic medicine, yes, it should be included. Complementary, I don't have much faith, so no. For the thing I have never used, I will not ask others to use." (1.1)*

> *"Only scientifically proven CAMs should be integrated, and all IMs should be regulated and practiced by professionals." (3.8)*

Physician attitudes toward integration were further assessed by asking their opinions on referring patients to a CAM practitioner, or working collaboratively with a CAM practitioner within the same health care institution. In particular, participants were asked, "If there were someone practising CAM or IM within your workplace, would you transfer patients to them?" Of the 30 participants, 21 said they would refer patients to a CAM practitioner, seven said they would not, and two neither refused nor supported the idea. Those who said they would refer patients or work collaboratively with a CAM practitioner in their place of work provided responses such as:

*"If it is benefiting the patient without putting any additional risk to the patient then it is okay." (1.2)*

*"Yes, possible, if the patient did not respond to medication or if I felt his problem would not be solved by medication, I recommend seeing a practitioner, e.g. massage, Hijama or something else." (1.4)*

*"I could, if I could not cure him and discussed it with my colleagues and there was also nothing we could do, then I have no problem to do so." (1.5)*

*"If I keep treating the patient, so both treatments in the same time, then yes I would." (1.6)*

*"I think the doctor should acquire the knowledge about CAMs and IMs but I don't know if people will accept that; but I might, why not? And I will follow up on the patient." (1.7)*

*"If it was controlled and there was a clear collaboration and communication then yes." (2.3)*

*"Yes, but after they are transferred to a psychologist and he/she decides the patient doesn't has a psychological problem, then yes." (2.4)*

*"Yes I would, and I would discuss with them the best action to take for the patient." (2.8)*

*"Yes, if I think they need it." (3.4)*

*"Yes, if there is scientific prove that this practice would help the patient." (3.7)*

Those who did not support the idea of referring patients to a CAM practitioner were largely concerned by the efficacy of CAM practices and the lack of empirical evidence to support the safety and effectiveness of these practices. These responses included:

> *"I think it is better to have their own separate places. I do not believe any doctor will accept that or accept transferring patients to them." (1.3)*
>
> *"That would be crazy, I would never." (2.7)*
>
> *"I would work with them but not transfer my patient completely." (3.5)*

Interestingly, of those who said they would collaborate with or transfer patients to a CAM practitioner, most reported that referral to a CAM practitioner would be a last resort if biomedical treatment modalities did not prove fully effective in curing the patient. Several recent studies have posited that with the growing popularity of CAM, physicians are increasingly willing to refer their patients to CAM practitioners. By referring a patient to another practitioner, a physician takes on some moral and ethical liability for the treatment outcomes, and this could be a major reason why some of the study participants did not agree to the idea. Even among those who said they would refer patients to a CAM or IM provider, there was an understanding that such a decision had significant implications for the patient and treatment outcome.

Following the understanding that biomedicine has its limitations, a three-step process was underlined as a starting point to integrating CAM into a biomedical physician's options for treatment. Most physicians in this study would not totally negate a patient's wish to try CAM, and a number would encourage it if the patient said they were experiencing a positive outcome with the treatment. Regarding inquiry as the first step in the framework, when asked about their typical interaction with patients and if or how CAM comes up, physicians admitted that they generally do not bring up these treatment options. The physicians were

generally aware of the limits of biomedicine in alleviating certain conditions; however, the topic of CAM was generally avoided due to liability issues and the ethical obligation of competent physicians to refrain from giving professional opinions on matters outside their expertise.

Regarding acknowledgement and accommodation as being the second and third step of the framework respectively, findings from the study suggest greater concerns here, due to the call of action being more proactive than the first. Despite knowing the limitations of biomedicine, there was a perceived general unwillingness to integrate CAM into their clinic practices. Some outright rejected it due to questionability of expertise in the CAM industry and the lack of scientific data supporting the practices. The findings illustrate the division of the health care industry in Saudi Arabia, whereas, according to Penkala-Gawęcka and Rajtar (2016), the framework encourages a wholesome approach to medicine rather than a biomedical supremacy and overshadowing of all other versions.

## 5.9. Summary

The findings from interviewing physicians on the part CAM and IM play in their typical patient engagement revealed several opinions and mindsets that directly affect the probability of a patient engaging in non-biomedical treatment. With regard to physician acknowledgement of CAM, most reported that they were aware of its efficacy, particularly IM, though they did not consider themselves well enough versed with the treatment to administer it. The overall shared opinion was more optimistic than critical, and the concerns raised were somewhat secondary and not necessarily meant to question the potential of the treatment. For example, one physician was concerned over their patient potentially contracting hepatitis C in an uncontrolled CAM environment.

Chapter 5: Physician Interviews

On matters of preference within the broad scope of non-biomedical treatment, it became apparent that some treatment forms were regarded more highly than others due to ethnic, cultural and religious bias. There was a strong preference for Hijama and Ruqya, which are religion-oriented and could be used as sole treatment options. In contrast, acupuncture and homeopathic practices, which are not Islam-based and therefore deemed foreign, mostly had partial support and were categorised more as being more complementary than an exclusive treatment option.

Age was also a dominant factor in the findings. Younger physicians appeared to be more trusting of medicine backed up by scientific findings rather than beliefs. CAM therapies seem to struggle deeply to be acknowledged by the younger generation, and younger clinicians reported unwillingness to collaborate with their counterparts in CAM to treat their patients, most notably citing questionable expertise. Many thought that guidelines or regulation of CAM, IM and TM treatments might make physicians feel safer about engaging their patients in non-biomedical medicine.

Chapter 6: Stakeholder Interviews

Chapter Six: Stakeholder Interviews

Five stakeholders were interviewed to evaluate their perceptions of CAM and explore the role of the NCCAM in facilitating and overseeing the use of CAM in primary health care settings in Saudi Arabia. The NCCAM is the federal government's agency for scientific research on CAM. While numerous definitions of CAM exist, the NCCAM defines it as diverse medical and health care practices, therapies, interventions, disciplines and products that are not part of mainstream or conventional medicine.

This chapter analyses the responses of each of the stakeholders based on the following themes:

- safety of CAM and IM
- efficacy of CAM and IM
- quality of CAM and IM
- integration restrictions.

Analysis used NVivo version 8. This involved importing the interview transcripts into NVivo for coding. Carefully reviewing each transcript, the researcher selected valuable sections of text and attached a suitable code to the highlighted passages. After coding the data using the analytical framework, the data was summarised in a matrix based on the emerging themes using Microsoft Excel. The matrix was developed to include one row per research participant and one row per assigned code. The researcher then abstracted data from transcripts for each code and each participant, summarised it word by word and added it into the corresponding cell. NVivo was used for effective access of indexed data for the codes in each transcript. Quotes that were seen to be potentially interesting were noted and highlighted within the matrix.

Chapter 6: Stakeholder Interviews

The stakeholders interviewed were the executive manager of NCCAM, two family medical physicians, a consultation paediatrician, and the deputy minister of the Ministry of Islamic Affairs. The responses of each stakeholder are evaluated with regard to the themes listed above.

Stakeholder 1: Executive manager of NCCAM

The executive manager of NCCAM is a family and society medical consultant with over 20 years' experience, who became interested in CAM due to the increase in demand for these alternative medical treatments, which were not being provided for in conventional medicine therapies.

When asked why the NCCAM was established, the executive manager explained that the MOH and related government departments had considered the need to address the increasing demand for CAM. To ensure safety and adequate regulation, the Council of Ministers defined what constituted CAM as well as its aims and goals, after which the centre was established.

When asked about the goals the centre has achieved since its establishment, the executive manager noted the following:

> *"Unfortunately, the centre faces a lot of obstacles and reluctance from academics or others because CAMs are not evidence based, but the centre, alongside with the Saudi Commission for Medical Specialities, succeeded in authorising permits for Hijama, acupuncture, massage, healthy diet and physiotherapy; but then we face obstacles from people against CAMs, or unprofessional CAM practitioners, and they are supported by false media, which only harm the work we do. The challenges are a lot but with patience*

*and hard work will overcome them. We also had a lot of published works and done some workshops, training and promotions."*

When asked about the role of physicians in CAM integration, the executive manager explained that most significantly lack information about CAM, either out of a lack of interest or because they did not believe in its efficacy. Still, some physicians have shown interest in CAM therapies, and as such the NCCAM has introduced educational workshops for interested physicians and consultants. Interestingly, in discussing how the NCCAM has promoted CAM in PHCs, the executive manager said that this has largely been left to physicians, but that the centre has played a role in promoting CAM through posters, social media and its own website.

Asked about the existence of a national policy for CAM, the executive manager said that the NCCAM had a five-year strategy, which was coming to an end at the time of the interview, and the centre was embarking on the next five-year strategy. However, financial obstacles and inadequate human resources, as well as a lack of solid regulations, were noted as significant barriers to the NCCAM achieving its goals. According to the WHO (2014), it is important for countries to have a national framework to facilitate the review, evaluation and monitoring of CAM, including setting up a coordination agency, a national advisory committee and a body to oversee the pharmaceutical activities pertaining to CAM products.

They further pointed out that this policy does not control the use of CAM across all departments in the MOH. On the contrary, the centre's policy is only concerned with authorising permits for practitioners, promoting CAM use, training and research. The centre has achieved significant progress in the areas of research, training and publication, but not in regulatory and promotional work in relation to the media. Some people working in the MOH and related organisations, as well as academics, have reportedly been obstacles to the

NCCAM's efforts to push for more comprehensive and patient-centred regulations. Asked about the centre's view of IM, the executive manager said:

> *"We don't have an ideology yet, and we need to define it first and we can work with other organisations on the definition, but we regulated Hijama (cupping) and we adopted a research in IM."*

When asked about the NCCAM's vision for the future, the executive manager reported that a key goal was to develop greater regulation of CAM, and to work hand in hand with the MOH and other organisations such as the Commission for Medical Specialities. Different types of CAM practices are regulated by different bodies, and the goal is to aggregate these different bodies and regulations into a single policy that will regulate practices such as acupuncture, massage, honey and reflexology. They also observed that evidence-based practices such as biomedicine are currently more regulated, even though the need also exists to regulate non-evidence-based practices such as IM. Other key goals of the NCCAM are achieving greater integration by providing more permits to practitioners, promoting CAM practice, engaging in more research and training, and agitating for integration of CAM with the health system through education or regulations.

### Stakeholder 2

The second stakeholder interviewed is a family medicine physician who also works as one of the Prime Minister's consultants in the MOH. They were also appointed recently as part of a committee involved in choosing a new director for the NCCAM.

The physician was asked what the MOH is doing to regulate CAM and IM, and responded that the MOH does not play an active role in regulating these therapies, which has contributed to the chaos in CAM and IM practices in Saudi Arabia. Asked about the practices of CAM and IM in the country, they reported that these were presently very unsafe and even

dangerous for patients. Relatedly, the physician was asked about the Ministry's plan to organise and regulate IM. They explained that by working with the NCCAM, the MOH was looking to develop criteria and indicators to aid in measuring evidence-based alternative and supplementary medical practices, control the use of these practices, and provide a licensing mechanism for practitioners and treatment centres.

Pertaining to the regulation and integration of IM with the health care system, the physician was asked about the nature of cooperation between the MOH and the Ministry of Islamic Affairs. They noted that no cooperation exists between these two ministries, but it would have a positive impact, especially with regard to educating the public about IM, such as through Friday sermons and advocacy activities. Asked about who should be in charge of legislating IM, the physician said they believed the MOH should have greater responsibility for issues pertaining to health, including IM. This is because the Ministry has the staff and resources needed to evaluate health practices. However, they also pointed out that the existing staff do not have adequate training on IM and other alternative practices. This training should also extend to doctors who want to practice alternative treatment modalities.

Asked about the safety and efficacy of IM, the physician said that these therapies may have their own benefits, especially in cases where illness is not responding to modern medicine; in such cases, these therapies should be accepted as therapeutic alternatives. Discussing the obstacles to integration of CAM and IM, they cited the fact that NCCAM still does not play its rightful role, given that it is yet to receive the support required to achieve its objectives. Further obstacles are the MOH's focus on developing conventional medicine as opposed to CAM, and the lack of a consistent policy strategy. Another challenge to integration efforts is the general lack of interest in this field among academics and medical practitioners, which can be seen through the lack of comprehensive training opportunities.

Stakeholder 3

The third respondent is a consultant paediatrician and works as the general director of hospitals in the MOH. Asked about the efficacy of CAM and IM, the consultant said that IM, though supported by the Quran, should only be done by a trusted practitioner with some medical background or training; regulation is also required. They said that safety of these practices could only be guaranteed if they were done by a professional practitioner, adding that CAM use should be regulated, and without such regulation there would be reason to be against it.

The consultant was asked about their current knowledge of CAM and IM, and responded that they did not know much about these practices, given the general resistance to them among physicians. This could be attributed to the fact that CAM researchers and practitioners have not provided adequate evidence for the safety and efficacy of these practices, and therefore physicians have very little knowledge of them.

Asked about the integration of CAM and IM with the health care system, the consultant said that more time is needed to provide adequate education for health professionals, to better acquaint them with these alternative therapies. Education and promotion are seen as the foundation required to determine whether CAM and IM should be integrated with the health care system. The consultant further noted that the onus was on CAM practitioners to convince health practitioners of their belonging in the health care system.

The consultant said the lack of evidence-based studies is a major barrier to integration. In discussing the changes required at the NCCAM, they said the centre needed to be empowered and instead of having individual leadership, it should be led by a committee. According to the consultant, the centre currently plays no role and seems to be isolated from

health practitioners. Studies show that one of the most effective ways to expand and establish the credibility of CAM is to develop an evidence base demonstrating its safety and efficacy. This would require the consolidation of national and global studies, and new research to build a more solid case for CAM use and integration with the health care system.

Stakeholder 4

The researcher additionally interviewed a family medicine physician who also works as one of the Prime Minister's consultants in the MOH. The physician explained that the MOH, through the National Centre for Alternative and Complementary Medicine (NCACM), is tasked with reviewing CAM and IM practices. They see a need to regulate CAM and IM in the country. Laws and follow-up should be made, since many practices happen without safe supervision from the NCACM and the Saudi Food and Drug Association (SFDA). According to the physician, the MOH has no plan to organise IM, and there is no cooperation between the MOH and the Ministry of Islamic Affairs. However, they feel that cooperation would be beneficial. In their view, CAM and IM are successful in treating disease, but need more research and study. Islamic countries, and Saudi Arabia in particular, can lead research on this subject because of their significant influence and heritage in IM. The physician said that the MOH should be entrusted with legislating IM because it should be based on medical evidence. He said that practitioners are receiving medical and paramedical training, but there is no formal CAM training except for Hijama practitioners in Saudi Arabia.

The country needs standardised training for bachelor's, master's and doctoral degrees in CAM and IM, like those existing in China. The physician explained that the system in Saudi Arabia does not allow physicians to practice CAM and IM, although some doctors practice it covertly. Practitioners need authorisation from the MOH and a license from the Saudi Commission for Health Specialties. The physician admitted that no comprehensive

centres for CAM or IM exist, but some train in Hijama under the supervision of the National Centre for Alternative and Supplementary Medicine at the MOH. They said that several obstacles prevent integration, such as a dearth of specialised colleges to teach CAM according to foundations and standards. In addition, many doctors and officials in the Ministries of Education and Health are opposed to CAM.

Stakeholder 5

The last respondent interviewed was the deputy minister of the Ministry of Islamic Affairs, who is also a consultant for the Ministry and was assigned to co-write an encyclopaedia in Tibbu Nabawi (the Prophet's medicine).

The deputy minister admitted that no clear regulations or rules control IM practices. However, the Ministry provides some guidelines against medically ineffective practices. The deputy minister believed that the issue requires more discussion to avoid misinterpretations of IM practices, as they could lead to serious side effects. They thought that the safety of CAM and IM depends on the practitioner and the practice itself, making it somewhat safe. They admitted that no cooperation existed between the MOH and the Ministry of Islamic Affairs, but would support any efforts to regulate IM with the help of Muslim doctors. The deputy minister said that CAM and IM use is a good idea if scientifically proven to be beneficial, but that they would not want to use it if it has not been proven safe. They said that the Ministries of Health and Islamic Affairs need to cooperate in legislating IM and establish a committee of doctors to provide the most effective regulations. When asked about obstacles to the integration of IM, the deputy minister said the only thing that could prevent it was a lack of a plan to start and the communications between the two ministries. Otherwise, support from doctors will make integration easier.

# Chapter 6: Stakeholder Interviews

## Summary

This chapter has evaluated the responses of stakeholders in Saudi Arabia with regard to the safety, efficacy, quality and integration of holistic health care practices (CAM and IM) with the health care system. Five stakeholders were interviewed and their responses analysed based on these key themes. Some of the findings resonate with the results of the quantitative survey (Phase 1) as well as the qualitative interviews with physicians (Phase 2). Findings focused on three areas Safety, efficacy and integration as be:

## Safety

The lack of a comprehensive policy regulating CAM use is starkly evident in Saudi Arabia, and this has implications for the safety of these therapies for patients and consumers. The first stakeholder explained that the NCCAM only had a five-year strategy; no national policy regarding the use and practice of CAM has been developed. It was further revealed that the NCCAM does not play a role in regulating CAM use across all concerned departments under the MOH. On the contrary, it is only concerned with authorising permits for practitioners, promoting the use of CAM, training, publication and research. While it is commendable that the centre is working in the right direction to ensure safety of CAM use by authorising permits for practitioners, much more is needed in the way of an overarching regulatory and legal framework for the different aspects of CAM, including manufacturing, distribution and access. Without regulating these areas, the use and practice of CAM would still not be considered as safe as it needs to be for patients and consumers (WHO, 2014; Staud, 2015).

## Efficacy

The paucity of evidence-based research has been a major obstacle to the integration of CAM with conventional medicine. Proof of effectiveness is key to facilitating integration (Cowan,

2014). This concern was aptly expressed by stakeholder three, who said that doctors are resistant to CAM because practitioners and researchers have not done enough in terms of building an evidence base to convince them of safety and efficacy. The second stakeholder further noted that the fact the MOH is not involved in regulation of CAM and IM has contributed greatly to the lack of effort in research to demonstrate efficacy (Yamey, 2011; Cowan, 2014).

*Integration*

Based on analysis of the stakeholder interview responses, although integration of CAM with the health care system is a desirable goal, several factors are impeding this process (Curtis et al., 2012). All stakeholders observed the lack of evidence available to clinicians as one of the most significant barriers to integration. Other important barriers include a lack of interest in CAM training and education, and a greater focus on developing conventional medical services, with little focus by the MOH on developing CAM practice as well. The lack of empowerment of the NCCAM has made this body unable to achieve its goals and objectives (Staud, 2015).

Chapter 7: Discussion

# Chapter Seven: Discussion

## 7.1. Introduction

This chapter covers a number of barriers to the integration of CAM into the large-scale treatment catalogue of the mainstream health industry in Saudi Arabia. Primarily, there is an acute shortage of valuable research and knowledge about the broad spectrum of medicines and therapies that constitute CAM, and their potential to aid patients in recovery, or at the very least alleviate the secondary symptoms and side effects of conventional medicine. This knowledge vacuum in the health care industry causes providers to shy away from alternative treatment, dismissing findings as inconclusive, and instead being willing to exhaust all options of conventional medicine before prescribing an initial CAM trial (Gerber et al., 2014; John et al., 2017; Al Moamary, 2008).

As health care providers are the trusted authority on medical matters, patients heavily rely on them to make sense of their ailments and for expert opinions. As such, health care providers must be empowered with sufficient information by their academic institutions, backed by rigorous research and empirical findings, on the efficacy, safety and capabilities of CAM, and integration into the recovery process, especially in chronic illnesses and lifestyle diseases that may require multiple forms of treatment for existing and emerging symptoms.

Other hurdles can be addressed by public awareness education on CAM, as well as prioritising CAM studies in research facilities and academic institutions as with biomedicine, and dealing scientifically with the issues that cause stigma and disregarding of the treatment, such as toxicity. Scientific evidence is the only approach that can dissipate the mystery around CAM, as well as formulate appropriate methods for transitioning patients into CAM without disrupting the psychological aspects of their recovery process (Al-Arifi & Al-Omar, 2011; Elolemy & AlBedah, 2012; Gerber et al., 2014).

# Chapter 7: Discussion

## 7.2. Discussion of findings

Studies suggest that younger, less experienced doctors may have significantly different perceptions of the safety and efficacy of CAM and IM, and their views about integration with biomedicine will differ from those of more experienced doctors (Zollman & Vickers, 1999). In fact, the findings in this study showed that younger doctors tended to be less optimistic about the safety and efficacy of CAM and IM, and were more reluctant about the idea of integration, calling for more significant evidence-based research. They were less likely to engage patients about CAM, or to transfer patients to a CAM or IM practitioner within the hospital setting.

These findings are in line with those of Stub et al. (2015), who argued that the perception of risk of the rise of CAM among health care providers and the way they communicate this risk to patients has implications for health and safety outcomes. Young doctors, perhaps due to their limited experience and first-hand knowledge of CAM, tend to be sceptical about the safety and efficacy of alternative treatments. Younger physicians are also more likely to be actively inclined to depend on and only believe in evidence-based practices compared to older physicians, especially those who have been exposed to alternative treatments that may not be based on empirical tenets of medicine.

### Lack of knowledge

Stub et al. (2015) and others have found that the possible toxicity that may arise from interaction between conventional and alternative treatments, and the lack of knowledge about CAM, are key reasons for the increased perception of risk among health care providers. As the findings here show in Saudi Arabia, like many other countries, lack of adequate knowledge and information about CAM is a significant barrier to integration. Lack of patient–physician communication regarding CAM can be costly. Some CAM modalities

could be harmful, especially to patients with chronic illness, or may require adjustments in conventional treatments temporarily. Without proper communication, a patient may use conflicting conventional and CAM treatments concomitantly. While the interaction between herbs and drugs could be beneficial in some instances, there is an increased risk for drug toxicity or severely adverse outcomes. Indeed, some herbs used by patients with chronic or terminal diseases have been found to change the metabolism of conventional drugs and to cause toxicity (Al-Mutair et al., 2014).

Health care providers play an important role in guiding patients' use of CAM. This necessitates that these key health care providers have sufficient knowledge of and education on alternative treatment. The finding that younger physicians were less open to the idea of integrating conventional medicine with CAM can largely be attributed to training. Yildirim et al. (2010), in their study in Turkey of nursing and medical student knowledge of CAM, found that over half of the respondents did not have any significant knowledge or information on CAM. Chez, Jonas and Crawford (2001) found similar results in their survey in the United States concerning medical student opinions about CAM. They found that even though students were interested in the clinical usefulness of CAM, they lacked sufficient knowledge about its safety and efficacy. The researchers recommended the inclusion of CAM subjects in medical school curricula to better prepare prospective physicians to address patient needs and questions pertaining to CAM, therefore effectively playing their role as patient advocates.

### Ineffective communication

Frankel and Borkan (2003) recommended that doctors routinely ask their patients about CAM use, to provide evidence-based care and optimise health care outcomes. Addressing barriers to doctor–patient communication about CAM use is important to pave the way for genuinely effective, patient-centred integration of CAM and conventional

medical treatment. For this to happen, there is a need for deliberate effort geared toward opening communication between physicians and their patients, especially in a generally conservative society such as Saudi Arabia.

This need to create real opportunities for discourse on CAM use between physicians and patients has been emphasised by several researchers. Roter et al. (2016) studied the communication predictors and effects of discussion about CAM on cancer patients, and found that although these patients use CAM, they often do not talk about it with their health care providers. They emphasised that discussions about CAM do not randomly occur; they take place within settings that support patient-centred communication. Increased communication about CAM was associated with high visit satisfaction among patients.

Barriers to communication about CAM are especially troubling in the case of patients with severe or chronic health conditions, such as heart disease, cancer or diabetes. This is because these patients may be using some form of CAM without conveying this information to their clinician or physician, in spite of the risks of toxic interaction, which raises the issue of safety and efficacy of CAM, especially among high-risk patients. Prussing et al. (2004), when examining how parents of children with Down syndrome perceived the quality of communication with physicians regarding the use of CAM, found that while parents were ardent advocates of biomedical issues pertaining to Down syndrome, they often did not discuss non-biomedical treatments and instead waited for paediatricians to initiate communication about CAM.

As findings in this study show, discussions of CAM in Saudi Arabia are relatively rare, and surprisingly are most likely to be initiated by patients, even though others have found that such discussions enhance the patient–physician relationship. The quality of communication between health care providers and patients has been shown to have

implications for patient satisfaction and health outcomes, decision-making and organisational compliance. Indeed, for a society seeking to integrate CAM with biomedical treatment, there is a need to prioritise communication as an essential clinical skill, as it is vital to the delivery of safe and efficacious CAM treatments, especially for at-risk patients. Undoubtedly, physicians are faced with the issue of how to address matters of CAM use.

Effective communication about CAM has the ultimate effects of minimising distress, mitigating adverse events resulting from the use of inappropriate treatment modalities, and improving clinical outcomes and overall quality of life. When it comes to communicating about CAM, critical issues to address include the role of clinicians in facilitating, promoting and integrating the safe use of evidence-based therapies. Another concern is the particular matters the physician should evaluate and discuss with the patient, with the goal of addressing the patient's needs.

The findings of this study show that physicians are reluctant to discuss CAM use with their patients, and as a result patients may also hold back from initiating such discussions. Interestingly, most patients usually do not speak about CAM use because they are under the impression that their clinician or physician may not want to know (Ge et al., 2013). Such findings emphasise the need for physicians to take the lead in asking patients about CAM therapies, to make patients more comfortable in talking about them. This could be in the form of a simple screening question about use of or intention to use CAM, with the goal of identifying patients who may or not be interested in CAM. Such an approach would provide patients the opportunity to disclose information and to seek advice on CAM use.

As this study shows, the physician's belief in the efficacy of CAM plays a significant role in whether and how they communicate with their patients about it. Even if physicians receive questions about alternative treatments, they may still feel uncomfortable about

addressing these issues due to their lack of relevant knowledge or expertise. In many ways, this provides an opportunity for integration, so that biomedical physicians can work side by side with CAM practitioners who have more significant expertise, knowledge and experience in this field. This also highlights the importance of improving undergraduate and graduate education to equip physicians with the knowledge to address patient concerns about CAM (Ge et al., 2013).

A recurring response among physicians in this study was that they were not experts, so they did not see it fit to ask patients about CAM use or to encourage such a discussion. In Saudi Arabia, CAM is not yet part of the core curriculum for undergraduate or graduate medical students. This explains why the large majority of doctors are unaware of CAM or do not feel equipped to discuss these treatment modalities with their patients. Spencer et al. (2016) found that factors such as formal education on CAM played a prominent role in clinician's tendency to ask patients about CAM. CAM referral patterns were directly associated with the clinician's level of education and their comfort level for discussing alternative medicine. Additionally, patient characteristics such as sex, education and medical history have been found to have implications for clinicians' CAM inquiry and referral behaviour. Cruz et al. (2016) found that clinicians who had been certified in CAM were more likely to ask patients about CAM use and to refer them to a CAM practitioner, compared to clinicians who had only passing knowledge of CAM. These results show that exploring opportunities for CAM education for health care professionals could play a significant role in the integration of conventional and alternative medicine. When health care providers have adequate knowledge about CAM, there is an increase in evidence-based referrals to CAM services, and this in turn increases the chances that patients will use appropriate interventions to improve clinical outcomes and overall quality of life.

## Chapter 7: Discussion

To facilitate more open communication and encourage disclosure, physicians must understand the complex yet essential role of CAM in the realm of conventional medicine. Furlow, Patel and Sen (2008) found that without discussion of CAM therapies, a patient's medical record is incomplete and the possibility of medical risk cannot be addressed. Most patients who initiated CAM without consulting their health care provider indicated that they did so because their physicians never asked them about their use of CAM.

### Fear of stigma

Robinson and McGrail (2004) in their literature review found that as many as 77% of patients in the reviewed studies did not disclose their use of CAM to their physicians. The main reasons why patients chose non-disclosure included concerns about negative reactions by the physician, the assumption that the physician did not need to know, and the fact that the physician did not ask. These findings and the physicians' attitudes toward discussing CAM use with their patients suggest that beliefs influence patients' decision-making about discussing CAM use.

The patient's experience with health care providers and their need to practice greater control over their health also impacts their decision to disclose or not. This means that physicians must recognise patient needs, beliefs and concerns about CAM, and work with them in a way that truly acknowledges these. This view is supported by Faith, Thorburn and Tippens (2015), who posited that the way patients perceive the quality of their relationship with their physician and other health care practitioners may have significant implications for health seeking behaviour, including their use of CAM and choice to disclose CAM use. In their study examining the link between patient-centred communication and provider avoidance, CAM use and disclosure, they concluded that patients are likelier to avoid their

physician and more inclined to use CAM when they perceive that communication with their physician is not patient-centred.

These findings are unsurprising, especially in societies with a high uncertainty avoidance culture, such as Saudi Arabia. According to Geert Hofstede's cultural dimensions theory, cultures demonstrating a high uncertainty avoidance index are less comfortable with uncertainty. Hofstede (1983) argued that countries with strong uncertainty avoidance try to create security in three ways. One way is through the technology that these societies use to protect themselves. The second way is by implementing a wide array of formal and informal rules, laws, regulations and behavioural norms in an attempt to manage or control risk. The third way is religion, since all religions in some way make uncertainty tolerable, but only countries with strong uncertainty avoidance have religions that claim absolute truth. Saudi Arabia scores 80 in the uncertainty avoidance dimension. In a country where alternative treatments are not seen as the norm, and there is a desire to avoid unorthodox ideas, this would explain why both patients and health care practitioners may avoid discussions on CAM use altogether. Fear of criticism and of being seen to question the physician could further keep the patient from having discussions about CAM, but the result could be non-compliance with clinical recommendations, especially if the patient feels alienated by health care practitioners. This also explains physicians' belief in IM safety and efficacy. Such avoidance has implications for the possibility of successfully integrating conventional medicine with alternative treatment modalities.

## Health care practitioner attitudes

Maha and Shaw (2007) observed that doctors' perceptions of CAM and its efficacy can have implications for doctor–patient communication. By supporting more open communication, doctors' concerns about CAM can be effectively addressed, or their

perceptions altered through knowledge of treatments or therapies patients need or are already using. Providing CAM to patients could enhance the range of treatment choices available to them and support the role of the doctor in providing optimal care.

Doctors' perceptions of efficacy and attitude toward a given treatment modality have several implications. First, such perceptions and attitudes affect the way they communicate with patients about the treatment modality. Second, perceptions may affect referral patterns. Doctors' attitudes to and perceptions of a type of treatment can also impact patients' health seeking behaviour, perception of control, satisfaction and clinical outcomes. In the context of integration, negative perceptions and attitudes toward CAM can act as obstacles to successful integration with conventional medicine. Findings in the present study show a large degree of ambivalence to overt scepticism among physicians about the efficacy of CAM, and this certainly has implications not only for patient outcomes but also for efforts toward integration (Aldossary et al., 2008).

Recent studies are beginning to show greater interest in evaluating the role of physician attitudes in predicting patient outcomes. Cvengros, Christensen and Hillis (2007) explored the similarities between patient and physician attitudes regarding the role of the patient in health care delivery and how this relates to patient outcomes. They found that patients who had similar attitudes to those of their physicians reported greater satisfaction with their medical care, and complied more with treatment recommendations than patients whose attitudes did not align with those of their physicians. This means that physician perceptions and attitudes are not just their own; they affect patients' use of certain treatment modalities and perceptions of their efficacy.

# Chapter 7: Discussion

## Lack of experience

Physician decision-making inevitably integrates accumulated knowledge with experience, which comes from being part of the medical community and from gaining evidence-based information from medical texts and clinical practice. Physicians, like everyone else, use heuristics to make decisions; while the use of heuristics can be beneficial, there is also the risk of making wrong decisions. Given that heuristics are usually unconscious or semi-conscious, they can, unbeknownst to the physician, predispose them to certain behaviours that can be entrenched and difficult to overcome. Heuristics can be tested by unusual phenomena, including different presentations of disease, or different treatment modalities such as acupuncture or herbs. Physicians who are aware of their biases may be able to overcome them in the face of unusual phenomena and assess the impact of conventional thinking. However, when the physician is unaware of their biases, it can be difficult to make decisions that consider the possibility of an unusual or alternative situation. Biases can be implicit, where the physician is unaware of their own heuristics, or explicit, where they physician is aware of their bias. Implicit and explicit bias can affect referral pattern and treatment recommendations, yet overcoming implicit bias can be particularly challenging given that the physician is unaware it exists.

## Physician bias

In discourses about the integration of CAM with conventional medicine, the role of physician bias must be considered. Responses from the surveyed physicians showed significant bias against CAM on the basis that these treatments are not based on scientific evidence, despite the substantial and growing evidence of their safety and efficacy. There is also a bias against alternative treatments that are not informed by Islamic (non-evidence-based) traditions and teachings. Concerns about the lack of scientific evidence remain a

significant barrier to greater integration of CAM with biomedicine. Undoubtedly such bias, whether intrinsic or extrinsic, can be an obstacle to integration. If physicians are largely unaware of their own heuristics, such as extrinsic bias toward CAM, it faces an even greater challenge.

## Spiritual influence

Given the dominant role of religion in all aspects of Saudi Arabian society, including in health care, a discussion of the influence of religion on doctors' attitudes to and perceptions of CAM is necessary. In the current study, survey results showed that even among respondents who expressed positive views of CAM, there was a greater preference for and belief in religious treatments such as Hijama and Ruqya than for CAM treatments such as acupuncture, massage and homeopathic practices.

The interaction between religion, spirituality and the use of CAM is markedly complex. Practitioners of religious and non-religious CAM argue that there are numerous medical conditions that biomedicine neither understands clearly nor can treat effectively. Practitioners and proponents of CAM view patients in more holistic and even spiritual terms, thus it may be expected that those who are religious may be more inclined to support the use of CAM, but this is not always a straightforward correlation. Indeed, as findings in the current study show, religious people may have a less positive perception of the efficacy, safety and appropriateness of CAM therapies. Integration may be more likely in societies where spirituality is emphasised, rather than rigid religious practices or organised religion. Alkabba, Hussein, Albar, Bahnassy and Qadi (2012) posited that traits such as openness, support for individuality and the capacity to accept new paradigms are predictors of the use of CAM. As such, spiritual openness, whether demonstrated by the physician or patient, may predict the support and use of CAM practices, especially those with spiritual or religious

influences such as Hijama. On the other hand, those who practise organised forms of religion may be repulsed by what they perceive as treatments that are contrary to their religious beliefs.

Aldossary et al. (2008) found that physicians who believed in the legitimacy and efficacy of CAM were more likely to refer patients to CAM practitioners, but more research is required to identify the characteristics of such physicians. Still, there is a consensus in the literature that openness to new models is a key characteristic of physicians who support the use of CAM.

While thinking about the integration of CAM and conventional medicine, it is common for the discourse to focus primarily on the political and socio-economic factors. However, as the findings of the current study show, it is equally important to consider the role of underlying value and belief systems in either facilitating or hindering integration. The philosophical and theological disposition and individual perspective of the physician, which includes their own preferences and biases, play a significant role in efforts to integrate conventional forms of treatment with non-conventional forms.

Generally, even in countries such as Saudi Arabia, there is widespread support for patient-centred care as the ideal form of care. However, with regard to the role of religion in health care, interactions between physician and patient are largely influenced by the physician's perception of relevance. Some physicians perceive a clear link between a patient's health and their religion, but this perception is less apparent to others. The way a physician responds when a religious topic comes up during their interaction with a patient largely depends on the physician's own religious beliefs. The same is true about the physician's perception of the efficacy of a certain treatment. In cases where religion plays a central role in the physician's life, as it typically does in Saudi Arabia, the greater their perception of the

impact of religion on health outcomes, and the greater inclusion of religion in the interaction with the patient. Indeed, in the context of CAM and IM, and in discussing the possibility of integration, the role of religion in medicine must be taken into consideration given its impact on the lives of the patient and physician.

## Clinical knowledge

Clinical decision-making characterises daily experiences within clinical practice. The process by which physicians make decisions involves consideration of biomedical knowledge, professional experience, problem-solving and assessment of possible outcomes to determine risk and benefit. Physicians are tasked with balancing clinical knowledge with their own personal characteristics, biases and experiences. Current evidence-based frameworks, especially those pertaining to medical practice, guide physicians in making effective clinical decisions with a scientific basis. The process of clinical decision-making entails recognising and clarifying the problem, identifying possible solutions and uncertainties, discussing alternatives, providing patient-specific information, understanding the patient's response and preferences, seeking out the patient's point of view, establishing a course of action with the patient, implementing following up, and assessing the health and patient outcomes (Frenke and Borka, 2003).

Even though physicians are bound by medical ethical frameworks in their decision-making, it is difficult to ignore the non-clinical influences that have implications for their perceptions of efficacy, relevance and safety, and for the clinical decisions they have to make every day. The process of making decisions in the medical setting is made more complex by factors such as patient expectations and the need for the physician to balance between efficacy and risk minimisation when selecting the best course of treatment. Historically, and more so in largely traditional societies such as Saudi Arabia, intuition and personal

experience played a greater role in decisions about issues such as treatment efficacy. However, starting in the early 1990s, evidence-based medicine emphasised the need for application of best practices in clinical decision-making. Although in Saudi Arabia decision-making has shifted from a largely paternal model to one that is evidence-based and patient-centred, physicians' personal experiences and biases still play a significant role, especially in disseminating information on non-conventional treatments. As the results of this study indicate, doctors' personal experience largely affects how they discuss CAM with their patients, as well as their perception of its efficacy compared to IM.

## Personal biases

In spite of the emphasis on evidence-based medical practices, personal experiences and therefore personal biases still influence physician decision-making. Physician religious and spiritual (RS) beliefs are forms of personal bias in themselves, and can influence clinical decisions and health care outcomes, especially for patients with chronic illness. While it may be acceptable and even necessary for physicians to consider patients' RS beliefs, the effect of physicians' RS beliefs on their willingness to discuss practices such as CAM needs to be explored in relation to integration efforts. Aldossary et al. (2008) found that physician beliefs may impact patient care even though there is no clear evidence explaining this interaction.

Indeed, as CAM use increases not just in Saudi Arabia but in many parts of the world, growing literature describes the role of spirituality and religion in physician perception and therefore impact on patients. In line with findings from the current study, Aldossary et al. (2008) found that RS beliefs of both patient and physician influence decision-making regarding CAM use, especially among end-of-life patients and those with chronic illness. RS needs have been found to be a significant source of stress among these types of patients, and addressing these needs especially with regard to the use of non-conventional medicine may

lead to improvements in the patients' psychological and spiritual wellbeing. Although there are challenges in measuring the effects of physician RS beliefs, it is evident that for any physicians, especially in a highly religious country such as Saudi Arabia, personal beliefs continue to influence their practice. Other studies have found that patients often use CAM alongside spiritual practices and want their physicians to inquire about their religious or spiritual background (Cruz et al., 2016). Spiritual resources and CAM are typically perceived as having both physical and spiritual purposes, especially when they share the goal of supporting and providing treatment.

Such perceptions can impact patients' coping capabilities, the decision-making process, control and health outcomes, making it necessary for the physician to address these issues with the patient. However, this does not mean that physicians should allow their own RS beliefs to influence their judgment and decision-making processes. Physicians who identify as religious or spiritual are more likely to perceive religious forms of CAM as being more efficacious than religious ones.

Interestingly, Cruz et al. (2016) found that those who are spiritual tend to be attracted to CAM, while those who are both spiritual and religious tend to have a preference for evidence-based therapies. However, this was not the case in the current study, which showed a general preference for and positive perceptions of religious forms of CAM, and unsurprisingly especially IM among religious and spiritual Saudi physicians. These findings suggest that physicians' spiritual and religious identities may influence patient adoption of and adherence to treatments. This means that the information conveyed by a physician concerning CAM can affect a patient's decision to use or continue use of CAM, or to adhere to either CAM or biomedical treatments.

# Chapter 7: Discussion

## The need for patient autonomy

These findings bring us to the issue of patient autonomy, because of the potential influence the physician has on patient decision-making with regard to CAM use and therefore on health outcomes. The concept of patient autonomy proposes the need for physicians to provide patients with evidence-based medical expertise to allow them to choose the type of treatment that most aligns with their values. Theoretically, those in the medical community affirm the concept of autonomy, but as the results in this study show, the application of true autonomy in clinical settings can be difficult, especially in relation to controversial issues such as CAM and other non-conventional treatments. In situations where the patient may not know what decisions to make with regard to the efficacy and safety of CAM, application of the concept of autonomy may not be straightforward. It has been argued that too much emphasis on patient autonomy can lead to physicians failing to exercise their responsibility to provide patients with evidence-based clinical information. Cruz et al. (2016) investigated whether physician religious sentiments had an impact on patient autonomy. In line with findings from the current study, they found that religious physicians tended to feel less obligated to refer patients to medical treatments they found questionable or not aligned with their own beliefs, a finding that contradicts the prevailing requirements for autonomy.

These findings suggest that physicians consider other factors such as their own religious values when valuing patient preferences. Indeed, it is important for physicians to consider all aspects of a problem in the clinical setting to be able to make an informed decision. In the current study, it is clear that physicians refrain from overemphasising patient autonomy concerning the use of CAM, but whether this is a progressive way of implementing autonomy or a continued manifestation of paternal interactions within the clinical setting is not yet clear. Notably, paternalistic models of patient–physician interactions are largely acquired during medical training and may persist, especially in conservative societies. Even

so, physicians must acknowledge that their values, perceptions and expectations may not be in line with those of their patients.

## Shared decision-making with patients

Clinical decision-making is fraught with ethical implications, including patient autonomy. This type of decision-making process is not only normative, but also influenced by the values of the physician involved in making the decision. This study found that physicians' personal values have implications for the decision-making process, especially where the clinical risks are conceivably higher. Within the clinical setting, shared decision-making between physician and patient is seen as normative, with the argument that patients have a right to self-determination when it comes to their health. The utilitarian approach proposes that involving patients in decision-making can improve health outcomes. Whether viewed through a normative or utilitarian lens, improvement in health outcomes is best achieved by involving both patient and physician in decision-making.

Studies on decision-making in the clinical setting have sought to determine the characteristics that predict successful decision-making (Maha & Shaw, 2007). The concept of shared decision-making is especially relevant in the context of CAM, where doctor and patient must work together to decide the most effective course of action, even in the absence of a solid evidence base pertaining to these types of therapies. Practising shared decision-making requires certain skills that a physician can only develop if they agree with prevailing ethical guidelines. At the heart of shared decision-making is the belief that involving patients in the process of making decisions about their health is desirable. This does not mean leaving patients to their own whims; on the contrary, it means supporting the patient's autonomy through establishing a mutually meaningful relationship with the physician, respecting the physician's expertise and recognising the benefits of interdependence.

Chapter 7: Discussion

Given the physician's role in the context of CAM use among patients, it is essential to consider the interaction between self-determination and relational autonomy. The former recognises the innate need to preserve one's health, while the latter concept describes the fact that patient and physician exist in a mutually dependent relationship, and their decisions have implications for these connections. Admittedly, some physicians believe that patients usually lack the ability to make informed decisions, and therefore the concept of shared decision-making may not be practically applicable in the clinical setting. With regard to integration, promotion of shared clinical decision-making can facilitate the use of both conventional and non-conventional treatments, but this is only possible if health care professionals believe in the rationale informing the concept of shared decision-making.

The practical application of shared decision-making faces several challenges, especially in the face of complex situations such as CAM use or non-use. Some of these challenges include low or non-existent health literacy, and cultural restrictions such as those in Saudi Arabia, where individuals typically do not make autonomous decisions and instead depend on experts to make decisions including those pertaining to their own health (WHO, 2017). The model of shared decision-making in the clinical setting is vital for CAM, to provide relevant information and facilitate deliberation on treatment options. Physicians have a responsibility to provide patients with expert information but also understand the patient's existing knowledge and whether this is credible. It is important to recognise that different patients value different outcomes and may prefer various treatment options. As such, adequately informing the patient allows them to make informed decisions based on what they value the most. The other role of shared decision-making is to provide opportunities for deliberation of treatment options based on the patient's response to the information provided. Patients may sometimes be hesitant to participate in the decision-making process where CAM

use is concerned, but the physician is responsible for including the patient in this process (Alkabba et al., 2012).

### Lack of sensitisation on benefits

Some experts believe that the integration of CAM can be accelerated when patients know the medical benefits that could emerge from it. People spend billions out of pocket seeking medical aid from CAM practitioners and purchasing CAM products, materials and classes. Most CAM costs are attributed to self-care therapies, including non-vitamin, non-mineral and natural products, yoga and homeopathic products. Much more is spent out of pocket to purchase pharmaceutical drugs and on visits to CAM providers and conventional physician services (Albaqawi, Butcon, & Molina, 2017).

### Apathy towards conventional medicine

The use of CAM has been documented in individuals with diabetes, arthritis, cancer, chronic fatigue syndrome and dementia in Saudi Arabia (Alrukban et al., 2012). The use of CAM can be limited because some patients have little trust in conventional medicine, as they believe that it has more side effects than CAM. Some patients who choose CAM may have heard that it is effective in treating particular diseases. Others view CAM as more consistent with their beliefs and values.

The use of CAM appears to be rising, especially in rural areas. Many of the CAM treatments used in the region are not yet proven effective in curing disease (Alrukban et al., 2012). According to the WHO, non-conventional or parallel systems are preferred for their availability and accessibility (WHO, 2014). One study found that the high prevalence of CAM in Jeddah, Saudi Arabia, could be attributed to the underlying belief that CAM treatment options are sometimes more effective than conventional medicines (Almutair et al., 2014).

## Chapter 7: Discussion

According to Almutair et al. (2014), CAM is widely accepted and employed in Saudi Arabia for various clinical illnesses. Common traditional and CAM practices in Saudi Arabia include herbal remedies and traditional treatments such as massage, Unani, bone setting and Ayurveda. Herbal CAM is currently incorporated into the National Health Services with conventional medicine in Saudi Arabia and the UAE (WHO,2016). Its use has engendered an increasing interest in CAM. Traditional Chinese medicine, homeopathy, chiropractic and other CAM therapies are being officially recognised (Cruz et al., 2016).

Some Saudis use CAM treatments alone, while others continue to incorporate it with conventional systems. Adults often use it for musculoskeletal and respiratory illnesses, as well as chronic conditions such as diabetes, cancer and psychiatric issues. Patients may be reluctant to discuss their use of CAM because physicians rarely inquire about it, or they may hesitate to disclose. However, some CAM treatments may be associated with drug interactions and side effects. Some fear that CAM may add to the impact of polypharmacy (Aldossary et al., 2008). Therefore, CAM treatments should be identified, and physicians should know how often adult patients are using them and the factors that influence their use.

## Recommendations

A sharp increase in the use of CAM in Saudi Arabia and other Arab nations has accelerated interest in these therapies (Alkabba et al. 2012). The rise in popularity of CAM in the Gulf and the Middle East regions, coupled with the sentiments of health care providers about CAM in Saudi Arabia, is significant if integration is to be successful. Clinician knowledge of and interest in CAM implementation will be pivotal in the establishment of proper programs, which can be used to encourage health professionals to incorporate CAM therapies into their practice. These programs may also be used to improve health care

provider and patient knowledge about CAM and engender CAM use. As a result, the quality of health care in Saudi Arabia will be enhanced.

### Improved communication

Generally, treatment and care have been hampered by a lack of proper communication between patients and professionals. This is primarily attributed to the reluctance of health care providers to initiate a conversation regarding CAM with their patients. Patients are also uncomfortable discussing the issue. However, the potential outcomes of unsupervised CAM use make it necessary that clinicians actively assess and counsel patients about CAM. A comprehensive CAM integration framework will improve patient access to and knowledge about CAM, and help minimise the communication barrier between health professionals and patients while improving the quality of care in Saudi Arabia (Aldossary et al., 2008). To initiate CAM, there is a heightened need to sensitise health care providers, including physicians, pharmacists and nurses, about CAM and its benefits and risks (Cruz et al., 2016). Professionals in CAM and palliative care perform these sensitisation campaigns. They should classify and teach diverse complementary therapies, particularly those that are most popular in the Arab Gulf and Middle Eastern regions. It is imperative that the most culturally acceptable CAM treatments in the country are identified. The campaigns should also deal with patterns of CAM use and its justifications. In this way, professionals can become familiar with patients' behaviour and counsel them appropriately (Al-Mutair et al., 2014).

### Awareness program

For CAM integration to be actualised, Saudi health care professionals will have to establish an awareness program to educate patients about the benefits and dangers of using CAM. In addition, patients will need to communicate their concerns. Some studies indicate that the ready availability of internet resources facilitates awareness and other information

regarding patient conditions and alternative treatments (Al-Mutair et al., 2014). Currently, health care providers seek additional information from trusted websites about unconventional remedies for numerous ailments in accordance with various cultures in Saudi Arabia. Some patients have been able to obtain a higher quality of care from CAM. However, a more comprehensive integration system of training and support within the existing facilities is necessary.

Minimisation of gender disparities in the application of CAM

Some studies have suggested that the prevalence of CAM use among women is more pronounced than it is among men (Gerber et al., 2014). Further, the response rate among women is more positive compared to that of men with regards to the scientific basis, long-term effects and side effects of CAM. These discrepancies could be attributed to the cultural context and dissimilar health perspectives between the sexes.

Incorporation of CAM in Saudi Arabia depends on the disease state (Cruz et al., 2016). Aldossary et al. (2008) reported that the probability of using CAM among elderly women diagnosed with cancer was higher than in those without the disease. High prevalence of CAM use was also reported among people who had become ill in the previous year, compared to those who had not been hospitalised in that year. The study concluded that the integration of CAM was more feasible for dermatological and musculoskeletal conditions. The likelihood of incorporating CAM systems into modern therapies in Saudi Arabia depends on availability and affordability, social acceptance, disease profiles, awareness, and experience of and beliefs about CAM.

Fewer treatment-related complications and previous experience with CAM have been cited among the most common reasons why it would be easy to integrate CAM with other therapies. Alkabba et al. (2012) argued that integration is possible because of the

dissatisfaction that Saudis have with conventional medicine. The majority of Saudis surveyed in their study used CAM simultaneously with conventional medicine, or for separate disease episodes.

The failure of physicians to discuss CAM use with patients was found to be a hindrance to the integration. It increased the likelihood of toxic effects and side effects of alternative treatments for conditions such as cancer. Many patients ignored the symptoms of side effects, leading to severe consequences. Some scholars suggest placing a demand on practitioners of conventional medicine to show cultural competency to ensure safe practice at every clinical encounter (John et al., 2014).

Sensitisation

Cruz et al. (2016) noted that patients should be given facts about CAM therapies regarding efficacy, possible interactions and adverse effects. Such facts will guide the patients' decision-making concerning CAM use. The few randomised clinical trials of treatments associated with CAM are a key concern because they limit the availability of substantial efficacy evidence.

By assessing health care professionals' interest in and knowledge of CAM, appropriate programs can be established. These programs will serve to persuade staff to integrate CAM into their practices, improve the knowledge of those concerned about CAM (WHO, 2014) and promote the application of CAM. The benefits and risks are a central part of the discourse on the ethical implications of using CAM and IM.

Besides patients' perceptions, CAM therapists' attitudes towards conventional medicine and medical professionals' perceptions about CAM can act as an obstacle to integration (Alkabba et al., 2012). An integrated system uses multidisciplinary teams and communication for effective patient care.

Chapter 7: Discussion

The outcomes of various studies show that more medical homeopaths, for example, also practise other forms of medicine compared with nonmedical CAM practitioners. This is unsurprising since most medical homeopaths may have had to undergo training to become a medical doctor. They are then required to take additional courses in homeopathy and even acupuncture. Most medical homeopaths still practise conventional medicine.

Members of the Homeopathy Society who practise medicine are usually allied health professionals. Therefore, for general practitioner homeopaths to practise homeopathy, they must become more open-minded concerning health models and body systems. Their thoughts transcend the biomedical model, especially in Saudi Arabia where homeopathy is very unpopular. Moritz, Vintila, Quan, Verhoef, Hardwick and Rickhi (2004) found that administration of CAM therapy by medical doctors was the least favourite method for an integrated system of health care by conventional and CAM practitioners. Most conventional practitioners would not practise CAM at all. One of the primary concerns for medical doctors and other health professionals practising CAM was the limitation of time. Time constraints are reflected in less frequent appointments and shorter consultation times officially allocated. The limitations of time placed on health professionals can be eased by medical practices that employ independent CAM therapists who have the freedom to practise only the alternative therapy if they wish within a health care setting.

The similarities in medical and nonmedical homeopathy practices may help forge relations between the two groups by boosting the confidence they have concerning each other's practice, to facilitate the development of a more integrated health system. In turn, incorporation leads to the more severe matter of individual therapy techniques (Hughes, 2007). For example, the practice of two different forms of acupuncture based on differences in theory and perception of acupuncture points is already happening. According to some scholars, the two different types of acupuncture facilitate a similar response (Robinson &

McGrail, 2004). The non-local effects of acupuncture could be fortuitously triggered as medical acupuncturists deliver medical acupuncture. The most significant beneficiaries of the direct improvements in medical systems integration will be the patients (Slade et al., 2004). It is pertinent to initiate future research towards achieving an effective integrated service.

To that end, the Saudi government's commitment to providing free health care services to all its citizens is consistent with the need to integrate CAM with conventional medicine. The MOH manages the Saudi health care system through health care facilities (HCFs) – the core provider of free health services, representing 60% of all health care services. Some governmental HCFs provide services to their employees and their families, while some private ones offer services in urban areas to all citizens (Alkabba et al., 2012).

The complexity of the health care system is largely attributed to the fact that the MOH has supervisory powers over all sectors of HCFs (WHO, 2017). The health care system, as in any other country, faces many challenges that make it difficult to administer conventional medical assistance whenever needed. These problems provide a valid reason for the integration of CAM into mainstream medicine. One of the many challenges facing the Saudi health care system is its geography. Saudi Arabia is among the developing nations in which a section of the population lives in remote rural areas, where there is a significant disparity in HCF distribution. The vast country covers 2.2 million km², over 2,000 villages, and 150 cities. Its population was estimated at 30 million in 2013. Almost 18% of residents live in remote rural areas. The impact of geography on access to health care can be mitigated with the incorporation of CAM and IM (WHO, 2017).

The next issue is the country's lack of medical expertise and shortage of medical and other qualified personnel (Aldossary et al., 2008). Expatriates largely provide health care services in Saudi Arabia. According to the recent statistics, non-citizens make up 44.7% of

nurses and 76% of physicians (Cruz et al., 2016). There is also a disproportionate number of physician consultants compared to the number of hospitals. Moreover, there is a near-perpetual unavailability of consultant physicians in some provincial hospitals. Of the total number of private hospitals, 55% are concentrated in two provinces, Riyadh and Makkah. This concentration represents 49% of the population (Cruz et al., 2016).

Population growth and an increase in the number of elderly people in particular have heightened the demand for health care services. By 2050, the population is projected to increase by 35.1% to 40 million, compared to 2012. The number of elderly people (65 years and above) will be approximately 18.4% of the population by 2050 (Alkabba et al., 2012). Additionally, cultural and traditional factors, such as interaction with the opposite sex, inflate the burden of medical personnel shortage challenges, which could be a substantial obstacle to the incorporation of CAM (Al-Mutair et al, 2014).

Another challenge regards equity of access to conventional medical resources. A large proportion of national health care resources is concentrated, with significant disparities, in the key cities. Many mainstream medical physicians and specialised services are concentrated in capital cities (Aldossary et al., 2008). Consequently, the half of the population living in rural and remote areas is served by less than 33% of the nurses and approximately 25% of the available physicians (Alkabba et al, 2012).

### Adoption of the principles of Universal Health Care and the Alma-Ata Declaration

Many countries have taken steps towards UHC; Saudi Arabia can also endeavour to move towards it, or sustain any gains it has already made. The Saudi government may be finding it increasingly challenging to respond to its citizens' ever-growing health needs and increasing health care costs (Alkabba et al., 2012). Thus, transitioning to UHC may require strengthening the country's health systems through robust financing of its key structures.

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Pooling funds from diverse sources can help to spread the population's financial risks of illness (Dacher, 2006). Such investments in primary health care could prove pivotal for achieving global UHC and ensuring access. Primary health care is about providing comprehensive health care throughout a person's life rather than the mere treatment of specific diseases (Hess, 2002). According to the WHO (2014), primary health care may be based on three aspects:

- addressing health problems throughout the life course and prioritising core system functions aimed at the key elements of integrated service delivery
- tackling the determinants of health through evidence-based public policies
- empowering populations to optimise their health, as advocates for health care policies and co-developers of health services.

UHC emphasises the services covered and their funding, management and delivery (Albaqawi et al., 2017). A fundamental service delivery shift is required such that services such as traditional and complementary medicine are integrated into the needs of the citizenry. CAM/TM could help empower people and communities to be more actively engaged in their health (Alkabba et al., 2012). The 1948 WHO Constitution on which UHC is based declares health a fundamental human right and endeavours to ensure the highest attainable health level for everyone (WHO, 2017). In its Declaration of Alma-Ata, the WHO committed to supporting the development of national health systems to strive towards and sustain UHC in conjunction with various partners. In line with the declaration, the Saudi government pledged commitment to primary health care (WHO, 2014). The government should increase its efforts towards improving health outcomes by increasing coverage of health services and reducing poverty arising from the payment for health services. One of the core objectives of UHC is to ensure that health care is accessible to all persons and not only to those who have the

financial means. Considering its affordability, integration of CAM/TM provides an opportunity for increased access to health care for most Saudis. This has been the case in other countries where CAM/TM has been embraced, such as the United States where the high expense of conventional health care was an influential factor in the increasing adoption of CAM/TM (Pagan & Pauly, 2005).

Another core goal of UHC is to ensure that the quality of health care is high enough to ensure that patient health improves. CAM/TM presents an efficient option for patients who may not obtain positive health outcomes from conventional health care. The negative outcomes of conventional health care may include side effects of using certain drugs and a poor practitioner–patient relationship. Barnett (2007) observed that CAM/TM helps fill gaps in conventional health care insofar as quality is concerned. In certain cases, such as in the Islamic or Arabic culture, patients may have religious or cultural beliefs that clash with conventional health care methods. In the modern health care system, health care has increasingly become patient-centred, with the patient actively playing a role in the formulation of treatment strategies. Without an alternative in the form of CAM/TM, patients with religious and cultural beliefs prohibiting certain orthodox medicine strategies may be at risk of not accessing health care – a clear violation of the UHC objective of health care for all.

In Saudi Arabia, the health care system is highly stratified. The MOH offers health services not only at the primary level but also at the secondary and tertiary levels (Aldossary et al., 2008). PHCs provide curative and preventive primary care services. More severe cases that need advanced care are referred to public hospitals, which comprise the secondary level of care. Complex level cases are transferred to the tertiary level of health care – specialised hospitals. Health services are provided through 244 hospitals and 2037 PHCs, which comprise 60% of the Kingdom's total health services (Almalki, Fitzgerald & Clark, 2011). Despite the transformation that the health care sector has undergone, Saudi Arabia still

struggles to meet the health care needs of many of its citizens due to population increase. Khalil et al. (2018) observed an increased demand for free health care services, which the health care system has not been able to successfully meet. The increasing demand has also been somewhat occasioned by increasing cases of non-communicable diseases, which form the bulk of the disease burden in Saudi Arabia (Khalil et al., 2018).

CAM/TM use has increased among Saudis in the form of IM and prophetic medicine, despite there being no traditional healing system. Integration of CAM/TM with orthodox medicine is yet to be fully realised, despite the general population embracing and using this form of health care. Khalil et al. (2018) noted that integration of CAM/TM would improve social, mental and physical wellbeing of patients, which is the core objective of quality health care. However, this would require the involvement of all stakeholders, including health care professionals such as nurses and physicians who would be expected to embrace this form of health care that may be new to them.

There has been a significant improvement in the accessibility of health care with the incorporation of CAM in many parts of Saudi Arabia. Many Saudis have been spared the constant journey to and from designated health centres and hospitals for therapies that can be done without the need for hospital facilities (Cruz et al., 2016).

For any integration framework to be successful, it should encourage practitioners and patients to share in decision-making regarding the treatment options to adopt. The practitioner should view the patient as the source of control and provide them with the necessary information and the chance to make health care decisions affecting them. The health system must accommodate diversity in patient preferences and encourage consultations. If there is a probable liability in the use of the alternative medicine, the clinician should discourage the patient from its use. The medical evidence should support

safety and efficacy. If one of these features is lacking in the alternative therapy, it ought to be cautioned. If the patient opts to continue with the treatment despite the practitioner's cautionary advice, the practitioner should go on monitoring the safety and efficacy of the therapy (Al-Mutair et al., 2014).

Health care institutions in Saudi Arabia encounter numerous potential operational barriers to the incorporation of CAM, including financial constraints and the need for appropriate clinical models for providing health care by various conventional medical and CAM providers. Kreitzer (2001) presented a process for strategic planning and decision-making with regards to the inclusion of CAM in Saudi Arabia's existing medical care settings.

The success of the integration of CAM will depend on whether CAM will be performed in a system-based effort or incrementally. It will also rely on whether it will be organised around a core in the system or dispersed all over. The concerned parties can then identify the decisions and actions necessary to implement the strategies (Kreitzer, 2001).

In seeking to develop models that involve both conventional and CAM therapies, Saudi health care institutions should maximise the existing health care institution guidelines and policies to deal with liability concerns. This will also help them to implement risk management practices and determine techniques of involving CAM therapies and providers.

One significant aspect involves credentialing of CAM providers, which is related to existing hospital mechanisms for credentialing. It also involves providing conventional medical providers with clinical privileges. However, it is also necessary that credentialing of CAM providers integrates information about educational and training standards, legal frameworks of practice, and competence in a given region instituted by various CAM professional organisations (Eisenberg et al., 2002). Credentialing of medical practitioners is possible if it is conducted by the health care institution itself or through a consultant.

Appropriate clinical models must also be developed to implement conventional medical therapies incorporated with CAM (Aldossary et al., 2008).

Saudis should be familiar with the models for integration of conventional medicine and CAM that will provide a favourable environment for successful implementation. In situations with less integration, practitioners with business self-interests get lease space in a medical centre. However, there is often little interaction between the programs.

Another approach involves medical institutions hiring CAM practitioners as members of staff to deliver specific services. The institutions then collect revenue from the services rendered (Sol & Faass, 2001). High-integration models use a multidisciplinary team approach to medical care. In some models, the physician is given oversight of all practitioners, both CAM and conventional. Others use an approach that is more collaborative. Alternatively, they may use a team structure in which a physician is a director for the institution (Al-Mutair et al., 2014).

Saudi practitioners can adopt the consultant model, where practitioners refer patients to CAM providers for specific treatments. However, this arrangement is non-competitive and less likely to offer many benefits. It is a favourite for physicians, as patients will often return for their primary care even after being referred to the CAM consultants. On the other hand, revenue depends on the provision of CAM services; thus, maintenance of a high volume of CAM services is necessary (Albaqawi et al., 2017).

*Primary care model*

The primary care model combines conventional primary medical care CAM care working in the same building. The benefits of this arrangement are that revenues are accrued from both practices. However, the ambiguity of the practice – whether it is mainstream or alternative – may make referrals difficult. In addition, there is competition with other

conventional care practices. The fitness centre model has high visibility, with a large population that concentrates on wellness. This model can also be used to promote merchandising of particular items. The virtual model offers services in a health care system, which a director of CAM services coordinates (Albaqawi et al., 2017).

The CAM-centric services approach extends licensed CAM provider services, and its involvement with physicians is limited. In this model, a medical doctor often leads the institution for both mainstream medical practitioners and CAM practitioners. The integrative model offers a significant portion of care by integrative medical physicians with expertise in one or more CAM modalities (Aldossary et al., 2008).

Medical institutions in Saudi Arabia can apply these different models for integrative medicine clinics and other HCFs. The country will benefit from a comprehensive system that employs the most reliable scientific evidence available regarding the benefits and risks of integrating CAM and conventional medical practices. Such comprehensive care requires that decisions be made based on the results of scientific inquiry (Alkabba et al., 2012). Studies in Saudi Arabia have shown that the effectiveness of CAM and conventional medical treatments can be enhanced if these treatments are applied together in a single modality. Patients often use multiple modalities of medical care rather than choosing one, and this pattern is highly likely to persist. It may even expand as evidence of the effectiveness of each therapy method increases. Therefore, understanding the interaction between CAM and conventional medical treatments is pertinent. It is also essential to determine how to integrate the two modes of treatment (Cruz et al., 2016).

*Policy formulation*

Saudi Arabian policymakers have the opportunity to make a difference, as they have to use the available information to make decisions regarding the future of incorporating CAM

and conventional medical practice. Health systems research should focus on pinpointing the elements of integrative medicine models, their care outcomes, and their cost efficiency compared with the cost of care in settings of mainstream medical practice. Research designed to answer questions about care outcomes is essential to ensuring that health care professionals are providing evidence-based comprehensive care. In this way, patients will focus on healing. It emphasises the centrality of relationship-based care and promotes choices in care, including CAM therapies (WHO, 2017).

*Framework for care*

To address health problems in individuals and the population in Saudi Arabia, it is imperative that clinicians and patients cooperate to execute a broad framework for care. The context needs to include both CAM and conventional medical approaches to health promotion and the safe treatment of illness. Evidence shows that models that integrate conventional and CAM therapies provide patients benefits (Al-Mutair et al., 2014). Therefore, more research is required to explain how integrated medical care delivery and the development of research infrastructure. Organisations and training programs are needed to increase the number of people who can work in integrated care (Al-Mutair et al., 2014).

One study discussed how western nations have published many more reports on the use of CAM among cancer patients compared to Middle Eastern countries. Few studies on Saudi populations have indicated the high prevalence of CAM use among Muslim cancer patients (and others). Religious practices, Zamzam water and other interventions were employed. Discussions among patients about CAM happened more frequently with their sheikhs than with their physicians (Albaqawi et al., 2017).

Saudis who opt for CAM approaches seek ways to enhance the condition of their health (Aldossary et al., 2008) or to alleviate symptoms of chronic illnesses or side effects of

mainstream treatments (Alrukban et al., 2012). In addition, they use CAM as part of a holistic health philosophy that accords them greater control of their own health (Alrukban et al., 2012). CAM practitioners often attempt to treat manifestations of illness as well as the nutritional, emotional, social and spiritual genesis of the illness. The use of acupuncture, yoga, deep breathing exercises, chiropractic therapy, homeopathy, naturopathy, massage therapy and meditation has significantly increased in the key cities and provinces in Saudi Arabia. The increase may be attributed to increased opportunity and heightened awareness of CAM among adult patients (WHO, 2017).

However, scientific research has presented limited evidence of the clinical efficacy of such therapies. Aldossary et al. (2008) reported that less than 20% of studies have found sufficient evidence on the effectiveness of a specific CAM therapy. The most commonly used practices were spiritual in nature, including Quran recitation and prayer. Other practices included the use of herbs, honey and dietary products. Hijama was used the least. Acupuncture was in practice among professionals. Some Saudis used practitioner therapies, such as yoga and acupuncture, for treating back pain, and acupuncture for knee pain, insomnia, and nausea or vomiting. Aldossary et al. (2008) concluded that acupuncture and massage therapy need inclusion among the recommended treatments for back pain. Many individuals used non-practitioner CAM therapies, including dietary supplements and relaxation techniques (Alrukban et al., 2012).

# Chapter 7: Discussion

The actualisation of successful CAM integration in Saudi Arabia will require health care professionals to educate patients regarding the dangers and benefits of CAM through well-established awareness programs. In addition, communication should be enhanced between health care professionals and patients. Patients and physicians alike must make extensive use of information sources such as the internet towards promoting awareness of CAM treatments and affiliated medications. However, the process of gathering relevant information needs to be strictly confined to authoritative and peer-reviewed literature, which will facilitate accurate and successful implementation of the objectives of CAM integration.

## Barriers to integration

### 7.1. Best approach

Despite the substantial evidence of the benefits of CAM, many barriers and challenges to its integration still exist. The solutions adopted depend on the type of health condition in question and the available facilities. The barriers and challenges to adoption and implementation of CAM in Saudi Arabian health institutions may differ based on the personal beliefs and capabilities of professional staff (Schlitz, Amorok and Micozzi 2005).

Economic demands condense the time health care professionals spend with patients, which ends up causing burnout among staff and endangering patients. Political involvement is increasing as the civic community demands more affordable health care. A new paradigm is necessary to deal with every aspect of this problem (Boyer & Paharia, 2008).

Science and technology have vastly enhanced diagnosis and treatment. However, excessive emphasis on science and technology has caused the exclusion of other healing elements. This has limited the humanisation of health care. A patient's healing is more than just the mechanics of their physical body. It should also include the emotional and spiritual

elements. These challenges have led to an integrative health care model based on a system of proper regulation rooted in rigorous scientific evidence (Shealy, 2006).

CAM is about understanding that human beings have mental, emotional and spiritual dimensions. These dimensions are critical in the diagnosis and treatment of health conditions. CAM and IM are about the whole person, not just the illness. Therefore, health, healing and wholeness are encompassed in a multidimensional tapestry (Gray et al., 2005).

Some elements are crucial for the development of a CAM and IM paradigm. There must be an expanded consciousness consisting of feelings, inner thoughts and spiritualism. In addition, it must have outer behavioural indices, including family influences, race, religion, culture and sexual orientation (Dacher, 2006). This paradigm embraces not an egocentric or ethnocentric viewpoint, but a world-centric point of view. An integral medical practice makes room for all effective treatments across all dimensions of human health (Hess, 2002).

Integrating health care involves several biases in CAM practices that prevent their complete acceptance in medicine. Biases such as perceiving spirituality as an organised religion, and not considering that the conscious mind can heal the body by itself, prevent successful integration (Dacher, 2006).

## 7.2. Existing models

The 2002–2005 WHO Traditional Medicine Strategy outlined objectives, components and expected outcomes for effective integration of CAM with the health system of any country. Table 7.1 shows where Saudi Arabia has met or failed these outcomes, from my research findings.

Table 7.1. WHO Traditional Medicine Strategy 2002–2005 and WHO 2014 Strategy: objectives, components and expected outcomes, and Saudi Arabia.

| **Objectives** | **Components** | **Expected outcomes** | **Saudi Arabia** |
|---|---|---|---|

| | | | |
|---|---|---|---|
| POLICY: Integrate CAM/TM with national health care systems, as appropriate, by developing and implementing national CAM/TM policies* and programmes | 1. Recognition of CAM/TM<br>Help countries to develop national policies and programmes on CAM/TM | 1.1 Increased government support for CAM/TM, through comprehensive national policies on CAM/TM | ✔ |
| | | 1.2 Relevant CAM/TM integrated into national health care system services | ✖ |
| | 2. Protection and preservation of Indigenous TM knowledge relating to health<br>Help countries to develop strategies to protect their Indigenous TM knowledge | 2.1 Increased recording and preservation of Indigenous knowledge of TM, including development of digital TM libraries | ✔ |
| SAFETY, EFFICACY AND QUALITY: Promote the safety, efficacy and quality of CAM/TM by expanding the knowledge base on CAM/TM, and by providing guidance on regulatory and quality assurance standards | 3. Evidence base for CAM/TM<br>Increase access to and extent of knowledge of the safety, efficacy and quality of CAM/TM, with an emphasis on priority health problems such as malaria and HIV/AIDS | 3.1 Increased access to and extent of knowledge of CAM/TM through networking and exchange of accurate information | ✖ |
| | | | ✔ |
| | | 3.2 Technical reviews of research on use of CAM/TM for prevention, treatment and management of common diseases and conditions | ✖ |

| | | | |
|---|---|---|---|
| | | 3.3 Selective support for clinical research into use of CAM/TM for priority health problems such as malaria and HIV/AIDS, and common diseases | |
| | 4. Regulation of herbal medicines<br>Support countries to establish effective regulatory systems for registration and quality assurance of herbal medicines | 4.1 National regulation of herbal medicines, including registration, established and implemented | ✔ |
| | | 4.2 Safety monitoring of herbal medicines and other CAM/TM products and therapies | ✔ |
| | 5. Guidelines on safety, efficacy and quality<br>Develop and support implementation of technical guidelines for ensuring the safety, efficacy and quality control of herbal medicines and other CAM/TM products and therapies | 5.1 Technical guidelines and methodology for evaluating safety, efficacy and quality of CAM/TM | ✖ |
| | | 5.2 Criteria for evidence-based data on safety, efficacy and quality of CAM/TM therapies | ✖ |

| | | | |
|---|---|---|---|
| ACCESS: Increase the availability and affordability of CAM/TM, as appropriate, with an emphasis on access for poor populations | 6. Recognition of role of CAM/TM practitioners in health care<br>Promote recognition of role of CAM/TM practitioners in health care by encouraging interaction and dialogue between CAM/TM practitioners and allopathic practitioners | 6.1 Criteria and indicators, where possible, to measure cost-effectiveness and equitable access to CAM/TM | ☐ ✖ |
| | | 6.2 Increased provision of appropriate CAM/TM through national health services | ☐ ✖ |
| | | 6.3 Increased number of national organisations of CAM/TM providers | ✔ |
| | 7. Protection of medicinal plants<br>Promote sustainable use and cultivation of medicinal plants | 7.1 Guidelines for good agriculture practice in relation to medicinal plants | ✔ |
| | | 7.2. Sustainable use of medicinal plant resources | ✔ |
| RATIONAL USE: Promote therapeutically sound use of appropriate CAM/TM by providers and consumers | 8. Proper use of CAM/TM by providers<br>Increase capacity of CAM/TM providers to make proper use of CAM/TM products and therapies | 8.1 Basic training in commonly used CAM/TM therapies for allopathic practitioners | ☐ ✖ |
| | | 8.2 Basic training in primary health care for TM practitioners | ☐ ✖ |
| | 9. Proper use of CAM/TM by | 9.1 Reliable information for consumers on proper use of | ☐ ✖ |

| | | | |
|---|---|---|---|
| | consumers<br><br>Increase capacity of consumers to make informed decisions about use of CAM/TM products and therapies | CAM/TM therapies<br><br>9.2 Improved communication between allopathic practitioners and their patients concerning use of CAM/TM | ☐ ✖ |

Saudi Arabia has shown an increased interest in CAM by establishing the NCCAM in 2008, yet there is no national policy or any plans for CAM integration. IM, on the other hand, is part of the belief system present in the country. A study by Ibrahim et al. established that the use of IM is highly prevalent among Saudi cancer patients, indicating the strong influence of religion on health behaviours. IM is researched and categorised by the Ministry of Islamic Affairs. The Ministry invested in public libraries for digital and paper books. Qualified research in CAM and IM is lacking, which is of primary concern to many conventional medical practitioners. A biological-based medical practice will need to be re-examined for CAM therapies to work. A model for incorporating medicine with psychology already exists (Schlitz et al., 2005). This model combines the categorical and individual aspects of health care. It uses a sequential process by which health care professionals can perform a comprehensive inquiry about symptomatology that aligns with the biopsychosocial model (Boyer & Paharia, 2008). This model guides the concepts of the biopsychosocial approach. It applies these concepts consistently with clinical evaluation, intervention and treatment planning.

Integrating CAM will help physicians to assess every dimension of the patient's health care requirements. Diagnosis can be performed effectively to allow practitioners to attend more effectively to them. Practitioners and patients can be empowered to watch for

symptoms in health care through support group networks for primary care physicians and CAM practitioners (Pennebaker, 2004).

The need to integrate CAM practices in medical schools is vital. However, the challenge is to provide education through cross-training behavioural, spiritual, health care and medical practitioners. This practice educates the practitioners first to enable them to decide the type of treatments they wish to use.

Some integrative practices complement western medicine and others are alternatives to it. Integral medicine combines western medicine with CAM choices. The practitioner could then practise medicine rather than guessing at the reasons for psychological, emotional or spiritual imbalances. The challenge with many CAM practices is that they often create a collection of treatments that would be problematic to a conventional medical doctor who would have no idea which would be the most effective with a patient (Shealy, 2006).

The transpersonal practitioner, on the other hand, knows when to make referrals and try out new techniques. This is possible by joining a medical group that specialises in integral treatments. The transpersonal practitioner connects with a more profound, more spiritual, consciousness-based practice (Gray et al., 2005).

Without primary care physicians becoming psychologists or spiritual counsellors, there are ways to alert other health practitioners to spot shortcomings in each other's practice scope. Physicians' lack of skill in some of the healing aspects of human health is a cause for concern, but they should recognise the spiritual and psychological problems in their patients. They should also be wary of the consequences of ignoring the elements of health and healing (Pennebaker, 2004). A health crisis opens the spiritual realm.

Another challenge is the mounting number of uninsured patients and the absence of reliable mental and spiritual health care coverage all over the world (Dacher, 2006). The

relegation of insurance coverage could be one of the most significant underlying deterrents to using the CAM and IM model. The solution could lie in shifting from a carve-out system to a carve-in structure of health care. In most instances, insurance benefits are separated from other insurance benefits. Therefore, the insurance contracts would be separate for physicians who practise beside spiritual counsellors, psychologists and psychiatrists (Schlitz et al., 2005).

This system increases the chances of over prescription of psychotropic medications by untrained primary care physicians (Hess, 2002). The inequality also extends to mental health coverage in comparison with conventional medical coverage. Incorporating would be of major advantage to both the patient and the physician, especially where equal coverage exists for all modalities. CAM and IM goes a step further by treating the disease, the physician, and the patient (Schlitz et al., 2005).

Conventional medicine should embrace collaboration with CAM and IM to see an improvement in the quality of care. This could destigmatise mental health care: people will ultimately view mental health providers as members of the medical team. This would make it easier to follow up a physical examination with a spiritual and mental health check-up if physicians, clinicians, spiritual counsellors, traditional health care providers and psychologists worked in the same location (Shealy, 2006).

This structure also enables support groups to converge on site at the medical institution. It could allow patients to book appointments with their health care practitioners in a common office. They will also be confident that their medical needs will be met by the same team. It would be difficult to find a spiritual advisor or psychologist who has no idea of a patient's medical history. Such a scenario would only prevent the patient from following through with the required appointments (Pennebaker, 2004).

Chapter 7: Discussion

CAM integration with conventional medicine would be excellent for providing an assessment sequence that could help traditional medical practitioners and spiritual advisors in understanding the demands of various physical health conditions (Boyer & Paharia, 2008). Moreover, physicians and nurses will be able to be oriented to the psychosocial factors that may negatively influence important medical outcomes.

*Conclusion*

This study noted a low and diverse attention accorded to CAM in Saudi Arabia. The prevalence of CAM use among Saudis is a matter of great concern because its practice could be ongoing and affect the use of conventional medicine. There is global interest in the application of CAM.

Studying and discussing CAM within the Saudi population will reflect the impact of religious, cultural and psychosocial factors on health convictions and behaviours. This study was aimed at presenting a balanced appraisal of the use of CAM and IM practices in Saudi Arabia. These included the most common types, most prevalent conditions, and most common uses of CAM.

A review of the literature revealed substantial differences in findings regarding the patterns of application of CAM. The most commonly employed practices were spiritual in nature, including prayer and Quran recitation, as well as the use of herbs, honey and dietary products. Other treatment options included Hijama and acupuncture, which were practised by professionals. The use of CAM is rife in Saudi Arabia. Efforts should be made to promote research in the realm of CAM to address each practice in isolation and collectively.

The fact that the terms ‘alternative medicine’ and ‘complementary medicine’ are applied interchangeably with conventional medicine in Saudi Arabia reflects how pervasive CAM is, and why it is crucial to investigate the connection between them. The integration of

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CAM practices into the dominant health care system needs to be examined and implemented, as such practices can be used for the benefit of patients against various kinds of illnesses. CAM and IM therapies can be categorised as body based, mind-body based, energy based, biological products, and whole systems (Boyer & Paharia, 2008).

The use of CAM has been seen as an idea that should be embraced by medical practitioners to help ease the pain of their patients using all means available. Physicians treating cancer patients, for example, may use CAM to alleviate the pain of conventional medical treatment produces. Moreover, they can use it for the humanistic care and emotional support that conventional medicine may lack. CAM and IM can also be used to enhance quality of life. It enables patients to be actively involved in therapy (Dacher, 2006).

Patients who receive a poor prognosis may resort to CAM to enhance curative probability, prevent recurrence and extend their survival (Gray et al., 2005). CAM is also perceived as a safer, non-toxic form of therapy compared to conventional medicine. However, herbs and vitamins used in complementary treatment can interact with prescribed drugs (Hess, 2002). In a palliative setting, patients may also focus only on CAM use at the expense of conventional treatments (Pennebaker, 2004).

*Recommendations*

To make integration of CAM into conventional medicine possible, some recommendations are suggested. The first is a national strategy to review the curricula for health colleges to prepare current and former health care professionals for the integration of evidence-based CAM practices.

In addition, efforts should be made to promote research in the CAM field to address each practice. Population surveys should be carried out to sensitise the public and medical

practitioners and raise awareness about the use of different CAM modalities. The NCCAM should lead the initiative to ensure these efforts come to fruition.

On a different level, physicians should initiate discussions about CAM with their patients. They should have an open-minded, non-judgmental discourse to consider CAM regarding their quality of life (Schlitz et al., 2005). Currently, most patients hold discussions concerning CAM and IM with their religious leaders (sheikhs) instead of their physicians (Shealy, 2006).

Health care providers should review their attitude toward CAM and consider these approaches as a way to help patients achieve optimal health.

Given the significance of CAM to practitioners and nurses, there is a need to explore CAM usage and knowledge among both discharged patients and those currently receiving treatment, to establish a comprehensive program of training and awareness of CAM in health care in Saudi Arabia.

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Appendix

# APPENDIX 1


**Title of Project**

Investigating the Use of Holistic Health Care in the Health System of Saudi Arabia:

How Can It Be Integrated?

**Name of Researcher and School/Faculty**
**Amani Alotaibi**
**Liverpool John Moores University**
Centre for Public Health, Faculty of Education, Health and Community

You are being invited to take part in a research study. You have been chosen because as a physician you are most likely to communicate with patients about their use of complementary, alternative or Islamic medicine. Before you decide it is important that you understand why the research is being done and what it involves. Please take time to read the following information. Ask us if there is anything that is not clear or if you would like more information. Take time to decide if you want to take part or not.

**1. What is the purpose of the study?**

There is a clear growth in the in the use of traditional and complementary medicine in Saudi Arabia, 74% of PHC patients visited CAM providers in 2011 (.Abdullah M. N. AlBedah et al, 2011). A gap in the literature factoring in T&CM practices within the Saudi health care system comes to light and filling that gap is the major aim of this study.

**2. Do I have to take part?**

No. It is up to you to decide whether or not to take part. Although by completing and returning this questionnaire You understand that you are consenting to be part of the research study and for my data to be used as described. You are still free to withdraw at any time and without giving a reason. A decision to withdraw will not affect your rights. Each questionnaire will be printed with a unique reference number. This number will not be linked to the participant, maintaining the participant's anonymity on return of the questionnaire. However, if the participant subsequently wishes to

withdraw from the study he/she need only contact the researcher, quoting the reference number and the questionnaire will be removed and destroyed.

**3. What will happen to me if I take part?**

The questionnaire will be 29 questions long answering questions involving T&CM. All the questions will be about your experiences and will not disclose any certain patient personal information.

**4. Are there any risks / benefits involved?**

There are no known risks but by participating you will be helping me the researcher to explore the attitude of physicians towards T&CM in the country, you will also help to uncover whether there are barriers towards the efforts to attain T&CM integration, the questionnaire itself does not include any questions about the barriers. Finally you will be able to evaluate the current level of T&CM in Saudi Arabia.

**5. Will my taking part in the study be kept confidential?**

Participation in this research is completely confidential. All data will be stored on a password protected server. Any data used in future publications will be anonymised, including verbatim extracts from interview transcripts.

**This study has received ethical approval from LJMU's Research Ethics Committee** (insert REC reference number and date of approval)

**Contact Details of Researcher**
**Amani Alotaibi**
**Email:a.m.alotaibi@2010.ljmu.ac.uk**

**Director of studies:**
**Dr Conan Leavey**
**Email: c.leavey@ljmu.ac.uk**

**I have read the information sheet provided and I am happy to participate**.

Appendix

Questionnaire identifier number: :


**1. What is your gender?**

- Female
- Male

**2. what is your nationality?**

- Saudi
- Asian
- North African
- Rest of Africa
- European
- North America
- South America
- Australian

**3. What is your religion?**

- Muslim
- Christian
- Jewish
- Buddhist
- Hindu
- Atheist
- Other

**4. Which category below includes your age?**

- 21-29
- 30-39
- 40-49
- 50-59
- 60 or older

**5. What is your job role?**

- General practitioner
- Surgeon
- Psychiatrist

**6. which category below includes your years of experience?**

| | | | |
|---|---|---|---|
| 0-2 years | 3- 6 years | 7-14 years | 15 or above |

**7. what is your practice settings?**

| | | | |
|---|---|---|---|
| Public Hospital | Private Hospital | Public Primary care centre | Private Primary care centre |

**8. what is your practice settings?**

| | | | |
|---|---|---|---|
| Public Hospital | Private Hospital | Public Primary care centre | Private Primary care centre |

**9. In which region do you work?**

| | | |
|---|---|---|
| Makkah | Riyadh | Aseer |

**10. in which of the following is your practice located?**

| | | |
|---|---|---|
| City | Village | Other |

| (you can tick more than one box) | Ruqya | Hijama | Exorcism | Massage | Acupuncture | Chiropractic | Osteopathy | Hypno-therapy | Visiting spiritual healer | Other CAM |
|---|---|---|---|---|---|---|---|---|---|---|
| **10.Have you ever used any of the following?** | | | | | | | | | | |
| **11.Have you ever** | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **recommended any of the following to a relative or a friend?** | | | | | | | | | | |
| **12.Have you ever been asked about any of the following by a patient?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **13. Have you ever asked a patient about the listed CAM's** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **14.Have you ever been asked by a patient to recommend any of the following?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **15. Have you ever treated a patient from any of the following's side effect?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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| (you can tick more than one box) | Ruqya | Hijama | Exorcism | Massage | Acupuncture | Chiropractic | Osteopathy | Hypno-therapy | Visiting spiritual healer | Other CAM |
|---|---|---|---|---|---|---|---|---|---|---|
| **16. In your opinion which of the following is the most safe?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **17. In your opinion which of the following is most effective?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **18. In your opinion which of the following has the most side effect?** | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Appendix

**How do you feel about the following statements?**

| Statement | strongly agree | agree | Mildly agree | Neither agree nor disagree | Strongly disagree | disagree | Mildly disagree |
|---|---|---|---|---|---|---|---|
| **19. I believe that complementary medicine should be integrated into the health system.** | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **20. I believe that Islamic medicine should be integrated into the health system.** | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| Statement | strongly agree | agree | Mildly agree | Neither agree nor disagree | Strongly disagree | disagree | Mildly disagree |
|---|---|---|---|---|---|---|---|
| **21. I do not believe that complementary medicine can benefit patients.** | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| **22. I do not believe that Islamic medicine can benefit patients.** | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

| Questions | Yes | No | I prefer not to answer |
|---|---|---|---|

Appendix

| | | | |
|---|---|---|---|
| **23. Have you ever heard about the Saudi National centre for Complementary and Alternative Medicine?** | ○ | ○ | ○ |
| **24. Does your work place spread awareness about complementary medicine Ie. seminars, leaflets „etc** | ○ | ○ | ○ |
| **25. Do you know where do your patients get their information about complementary or Islamic medicine?** | ○ | ○ | ○ |
| **26. have you encountered a patient that refused biomedicine for Islamic medicine?** | ○ | ○ | ○ |
| **27. have you encountered a patient that refused biomedicine for complementary medicine?** | ○ | ○ | ○ |

| Questions | never | rarely | sometimes | Often | Almost everyday |
|---|---|---|---|---|---|
| **28. How often do you encounter a patient using complementary medicine?** | ○ | ○ | ○ | ○ | ○ |
| **29. How often do you encounter a patient using Islamic medicine?** | ○ | ○ | ○ | ○ | ○ |

**30-In your opinion how safe are the following?**

| | **Extremely unsafe** | **Mostly unsafe** | **Somewhat safe** | **Mostly safe** | **Extremely safe** |
|---|---|---|---|---|---|
| **Ruqya** | ○ | ○ | ○ | ○ | ○ |

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| | | | | | |
|---|---|---|---|---|---|
| **Hijama** | ○ | ○ | ○ | ○ | ○ |
| **Exorcism** | ○ | ○ | ○ | ○ | ○ |
| **Massage** | ○ | ○ | ○ | ○ | ○ |
| **Acupuncture** | ○ | ○ | ○ | ○ | ○ |
| **Chiropractic** | ○ | ○ | ○ | ○ | ○ |
| **Osteopathy** | ○ | ○ | ○ | ○ | ○ |
| **Hypno-therapy** | ○ | ○ | ○ | ○ | ○ |
| **Visiting spiritual healer** | ○ | ○ | ○ | ○ | ○ |
| **Other CAM** | ○ | ○ | ○ | ○ | ○ |

Appendix

# APPENDIX 2

## Makkah(1)

### Interview One(1.1): 150913_003

me: how old are doctor?

Dr: I'm 42

me: And where are you from?

Dr: I'm from Pakistan

me: your religion?

Dr: Muslim

Me: Muslim. I have to ask these questions. I know you are but I have to ask them. Ok, how long you've been practicing medicine?

Dr: It's almost 15 years.

Me: almost 15 years masha Allah. inshallah 15 more. Ok have you been working in the same city and hospital since you started practicing?

Dr: No, I've been working here for the last 10 years and before that I was in my country.

Me:you were working in Pakistan?

Dr: yes

Me: ok thank you, did you work in a private hospital or just this?

Dr: No, only public hospital even in my country I worked in a public

Me:As a physician can you give me an average number about patients you've seen and use some kind of complementary or Islamic medicine?

Dr:I have never seen anybody practicing this complementary medicine in Pakistan but homeopathy is very common in Pakistan but homeopathy is not common here but but other things like (kay) in Pakistan I can see 15 person a year cause most people use some kind of complementary medicine injections and surgery, here I see 15 to 20 persons I've seen practicing Hijama never seen any practicing beside hijama and the patients are not telling us. If we ask specifically then maybe some will tell us, so we can say 10% do not tell us

Me: What do you think about Islamic and complementary medicine?

Dr: You know I have no personal experience but being a Muslim I will not say anything against Islamic medicine, It must have some influence in patients health Other homeopathic medicine i don't have faith on them apart from Islamic medications I speak about homeopathic medicines because they don't have the convince that conventional medicine have so I personally don't have faith in them exept the Islamic, I have to.

Me: Have you ever used Islamic medicine?

Dr: No, I never had a chance

Me: Not even Ruqya , hijama or visiting spiritual healers?

Dr: When I was a child maybe my parents took me to see a spiritual healer but since I begin my practice I have never been

Me: what about your patients have you ever asked them if they use anyCAM or IM?

Dr: as far as I concern is the ZAMZAM then yes I advice but other than that I'm not an expert so I don't advice and I don't ask them they should carry on what they are doing but you have to take these medications

Me: Have you ever seen a patient who left biomedicine for CAM or IM?

Dr: I don't know because usually we are  not following the cases

Me: Do you encourage the integration of CAM and IM if it was regulated by professionals and MDs?

Dr: Islamic medicine yes it should be included, complementary I don't have much faith so no. for the thing I have never used I will not ask others to use

Me: Have you ever discussed CAM or IMs with other doctors and if so what was the main topic?

Dr: just when I first came it was new for me the Kay we did not use that in Pakistan so I just asked what is that but if it is good or bad was not discussed

Me:Do you see CAMs and IMs regulated and integrated with the health system? and would you support or be against?

Dr:for the Islamic I will support but the other no

Me: Have you ever heard about the NCCAM in riyadh?

Dr: No

Me: Have you ever seen any information about CAM or IMs in your work place?

Dr: No

Me: How do you feel about working with a CAM or IM practitioner ?

Dr: you are asking the same question I support only Islamic medicine

Me: Have you ever followed or read any papers about CAMs?

Dr: NO

**Interview Tw(1.2)o: 150914_002**

Me: how old are doctor?

Dr: 27

Me: Nationality?

Dr: Pakistani

Me: Religion?

Dr: Islam

Me: How long you have been practicing?

Dr: 3 years

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Me: Have you been working in other hospitals or cities beside here?

Dr: I worked in Pakistan for 3 years and I recently came here so I'm new

Me: Do you work in private as well?

Dr: In Pakistan I worked in private for 6 months but here only public

Me: Have you seen any patients using CAM or IM?

Dr: yes i have seen many but not here in Pakistan telling their stories mostly about Islamic spiritual healers

Me Can you give me an average about how many patients per week you see using CAM or IM?

Dr: I've only seen 2

Me: Have you ever asked a patient if they are using CAM or IM?

Dr: yes when ever I take the history of the patient I ask them about these practices

Me: What do you think about CAM?

Dr: From what I heard from the patients they got good benefits at times from spiritual healers and CAM but I personally don't go for it and don't advice any one to go because I don't find any scientific reason for it so I ask them if they are satisfied please go on it will not benefit them and it will not harm its their believe that it will cure them no harm in it and go on

Me: Have you ever used IM or CAM?

Dr: I have not

Me: Can you describe the patients using CAM eg (Massage- Acupuncture)?

Dr: I have not come across so many patients using these types of CAMs more toward Islamic

Me: What about IM then?

Dr: mostly people from poorer background and lower education even if we tell them at this stage you will have no benefit they say just leave us go out of the hospital and some time they can get benefit and sometime no benefit, but I also have seen patients with higher economic and educated background have faith in spiritual healers but mostly lower social class

Me: Have you ever encountered a patient who left biomedicine for CAM or IM?

Dr: yes I came across one patient, he was my neighbour actually we both used to have similar back ache and we were unable to bend and play so he just lift physio therapy and went to some spiritual healer and he said that he gave him some water that helped

Me: how safe do you think CAMs and IMs are?

Dr: if it is practiced fully as a spiritual medicine it is not harmful but back in my country I've seen that spiritual healers and practitioners prescribe medication that contain steel and heavy metal which cause renal failure and I came across a lot of patients with that and from taking their history we found out he was using some kind of CAM so that's why I don't force them to go to them and don't force them to avoid them I just tell them this may harm them if they used the medication prescribed by those people who do not know about what they are doing

Me: Have you ever talked about CAM or IM with other doctors? and if so what was it about

Dr: I really don't believe in the benefits of it so i did not discuss it with any one

Me: What about your work pace do they promote any awareness about CAMs or IMs?

Dr: No I have not seen in the hospital but I have seen advertisements about practitioners

Me: How do you feel if within your practice there was someone who practice CAM or IM?

Dr: If it is benefiting the patient with out putting any additional risk to the patient then it is ok

Me: Have you heard about the NCCAM in Riyadh?

Dr: No never

**Interview Three(1.3): 150914_003**

Me: How Old are you Dr?

Dr: 28

Me: Nationality and religion?

Dr: Muslim, Yemeni

Me: How long have you been practicing medicine?

Dr: about three years

Me: Have you been working in the same city and hospital since you started?

Dr: yes

Me: Have you encountered patents that use CAM Or IM?

Dr: not a patients but relatives use Hijama

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No I normally ask about his medical background

Me: What do you think about CAM and IM?

Dr: it depends on the case but some times it has benefits, especially the Ruqya and Hijama are proven to have benefits by the prophets Hadith and the Quran,

Me: What about visiting spiritual healers and exorcism?

Dr: Also possible to have benefits I strongly believe in it

Me: Personally have you ever used CAM?

Dr: I have never used it

Me: what about Islamic medicine?

Dr: also I've never used it but I'm thinking to do Hijama it don't have a problem with it.

Me: How safe do you think CAM and IMs are?

Dr: i think IM is so safe and CAM needs a specialist even massage can cause problems if it was not done by professionals

Me: Have you ever discussed CAMs or IMs with your colleagues?

Dr: No never

Me: Do you think the ministry of health should regulate CAM and IM?

Dr: I think its good and I think the ministry of health can control who preform CAMs and IMs

Me: How do you feel if a CAM or IM practitioner was practicing within your work place?

Dr: I do not think it will happen

Me: Assuming it will happen?

Dr: I think it is better to have their own separate places I do not believe any doctor will accept that or accept transferring patients to them

Me: Have you encountered any kind of awareness (leaflets etc.) about CAMs or IMs?

Dr: No this is the first study I've heard about regarding this subject, but some times we see patients we can not do anything to them and some doctors will tell them with your medication you can try Quran Ruqya it defiantly benefit the patient but with the medication

Me: Have you encountered a patient who stopped biomedicine for CAM or IM?

Dr: No

Me: Have you heard about the NCCAM?

Dr: No

**Interview Four(1.4): 150914_004**

Me: How old are you?

Dr: 40 years old

Me: Nationality and religion?

Dr: Turkustani, Muslim

Me: How long have you been practicing medicine?

Dr: about 10 years

Me: Have you worked in other cities or private?

Dr: No

Me: Have you encountered patients using CAMs or IMs?

Dr: yes

Me: Can you give me an average number?

Dr: 2 out of 10

Me: what do you think about CAM and IMs?

Dr: they are good but there are no facilities in Saudi, that's number one, number two equipment's hygiene are not good for example when I do Hijama I'm not sure it is clean so I'm doubting and afraid for my safety plus the practitioner who is doing Hijama or Kay or massage I'm not sure if he is healthy or has a medical problem like habitats C

Me: Have you used CAMs or IMs?

Dr: yes especially massage and physiotherapy because I have a back desk problem I either invite or go to a professional for physiotherapy and massage, but Acupuncture and other CAMs I've never tried them.

Me: Have you recommend it then?

Dr: sure very much I highly recommend it as well

Me: Have safe do you think CAMs and IMs are?

Dr: It depends some of my patients are fit, young and with low risk factor I if he have low back pain I recommend physiotherapy and massage, some patients could have a stroke and they ask if Kay and Hijama is good, well of course they are they are proven in Shariea and from the prophets , so sure they have benefits but as a doctor in this century I do not like to talk about it until the patient ask me personally not as a professional, if he asked: Dr do you recommend doing it before medication I would say no first use your medication and if you did not get the results you were hoping for then yes there is Ruqya and Hijama and the rest of it

Me: Can you describe the age and class of the people using CAMs and IMs?

Dr: More Females than males about 3 female to 1 male and (30 to 40)years of age  above 40 they do not care as much

Me: have you encountered a patient leaving biomedicine for CAMs or IMs?

Dr: yes a lot and mostly for Islamic medicine like Hijama and Kay

Me: Have you ever discussed with a colleague CAM or IM? and if so what was the main topic?

Dr: Maybe because of my back problem I speak a lot about it, Physiotherapy and massage, the benefits and disadvantage because every procedure has advantages and disadvantages < so they help me for a while but after 3-4  days I have pain so when I talk with them I tell them the benefits are more with massage and physiotherapy

Me: In your work place have you seen any type of patients awareness toward CAM or IM?

Dr: No never

Me: Have you ever heard about the NCCAM?

Dr: No, maybe I read about it in a news paper but do not remember exactly

Me: How do you feel about integration?

Dr: I wish, because we have patients with strokes for example and they want anything to help

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: yes possible if the patient did not respond to medication or if I felt his problem would not be solved by medication and it happened I have some friends and relatives who have back or bones pains and they tried going to doctors but did not work for them so i recommend it seeing a practitioner e.g. massage, Hijama or something else and when I meet them say after 10 days they tell me the feel better

**Interview Five(1.5): 150914_006**

Me: How old are you?

Dr: 25 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: first years

Me: Have you worked in other cities or private?

Dr: No

Me: Have you encountered patients using CAMs or IMs?

Dr: No

Me: Have you asked patients about using CAMs or IMs?

Dr: Yes, most of them said no and I do not remember otherwise

Me: what do you think about CAM and IMs?

Dr: I don't have a problem with it

Me: CAM and Islamic?

Dr: Islamic, do you mean Hijamah?

Me: Hijamah, Ruqya, visiting spiritual healers..

Dr: I do not have a problem with Hijamah but other practices we should not start with them we need to go see a doctor if the patient did not get results then you can use Ruqya and other practices

Me: Have you ever used any form of CAM or IM your self?

Dr: Till this day no

Me: Do you think you will ever use them?

Dr: As I said before I will not start with using these practices till I seek someone with more knowledge

Me: How safe do you feel it is for a patient to use CAMs and IMs?

Dr: I'll give you an example in Islamic medicine everyone has their own opinion there are no guidelines like we have here that is why I don't believe in them but if there were research or guidelines I can check I might say they are safe then but now I would say no it is not safe

Me: what about CAM?

Dr: there are some studies about them so I can say safe.

Me: Have you ever discussed with a colleague CAM or IM? and if so what was the main topic?

Dr: No we never did

Me: How do you feel about integration?

Dr: It should be integrated and regulated by the ministry of health, it is very random now and it's not working.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: I could if I could not cure him and discussed it with my colleges and there was also nothing we could do then I have no problem to do so.

Me: In your work place have you seen any type of patients awareness toward CAM or IM?

Dr: No never

Me: Have you ever heard about the NCCAM?

Dr: No I've never.

Appendix

**Interview Six(1.6): 150914_007(Female)**

Me: How old are you?

Dr: around 35

Me: Nationality and religion?

Dr: Sudanese, Muslim

Me: How long have you been practicing medicine?

Dr: 14 years

Me: Have you worked in other cities?

Dr: Yes, I used to work in the capital of Sudan. There are 3 cities in the capital and I worked in all of them.

Me: Have you worked private?

Dr: Most of my work was in public field.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes in Sudan I have seen the (KAY= burning the skin with a hot metal in a certain way) they used it for hepatitis

Me: What about in Saudi?

Dr: I have not been here for long so I can not judge.

Me: what do you think about CAM and IMs?

Dr: There is a good side and a bad side, there could be sever side effects. The patient could have a strong believe in the CAM or IM and that would stop them from seeking the correct medicine and there are some good practices like Hijama we all know this Islamic practice and hoe beneficial it is but I have no experience in it. In the other hand I've seen people who said they found massage and acupuncture very helpful.

Me: Have you ever used any type of CAM or IM?

Dr: No I have not.

Me: How do you classify people who use CAM or IM?

Dr: There is no classification for people who use them they could be males or female and no age range. Even if the person was not convinced the parents will talk them into it. The majority of older people believe in them especially IM.

Me: What do you feel about integration?

Dr: I think it will make patients seek medicine within the ministry of health so they will take medical treatment and the treatment they believe in from the same place.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: If I keep treating the patient so both treatments in the same time then yes I would.

Me: Have you encountered patients stopped using conventional medicine for CAM or IM?

Dr: yes I have and a lot especially chronic diseases like cancer or HIV some times they think it's (Jen = demonic possession)

Me:  How safe do you think CAMs and IMs are?

Dr: some are safe and some are not, IMs could be safe but some practices like (KAY) could be dangerous.

Me: In your work place have you seen any type of patients awareness toward CAM or IM?

Dr: No never

Me: Have you ever heard about the NCCAM?

Dr: No I've never.

**Interview Seven(1.7): 150914_008**

Me: How old are you?

Dr: 27 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: One year and three months

Me: Have you worked in other cities or other hospitals?

Dr: No

Me: Have you worked private?

Dr: No

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes

Me: How often?

Dr: If I see 50 patients a week 5 of them would be using CAM or IM

Me: Have you ever asked a patient if they use CAM or IM?

Dr: yes I have asked before

Me: What do you think about CAM and IM?

Dr: CAM and IM complement biomedicine and do not go against it, especially us as Muslims we need to believe in (Ruqya, Hijamah, Honey and Zamzam=the holy water) sometimes there are no medicine except Corticosterone in biomedicine so using CAM and IM might work

Me: Have you ever used CAM or IM?

Dr: I suffer from Ulcerative colitis and the only medication for it is Corticosterone and in the case if complication it could lead to colectomy, my sister had also had Ulcerative colitis and she used biomedicine then she had to go to America to get colectomy and she is under weight now and 2 years younger than me. When I saw what happened to my sister (and I'm a doctor) I used Zamzam, Honey and Ruqya and thank Allah now the symptoms are gone. You know here some people will tell you how can you leave biomedicine and you are a doctor but in my opinion more studies needs to be done on IMs especially here cause we always follow studies the have been done in westerner societies. So I'm planning to specialise in the digestive system and do a study about honey's, zamzam and other IMs effects especially on incurable diseases. I am with CAMs but especially IMs cause we are

Muslims so we need to study it more and we are the only ones that can do it cause westerners don't believe in

Me: Have you ever encountered a patient that left biomedicine for CAM or IM?

Dr: No, I have not. But I will repeat and say as a Muslim doctor a became a doctor cause I believe in biomedicine but for incurable diseases we should use IMs

Me: What do you feel about integration?

Dr: I wish that would happen but it needs to be supported with studies like they did in the university hospital in Jeddah where they done studies about the black seed.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: I think the doctor should acquire the knowledge about CAMs and IMs but I don't know if people will accept that but I might why not? And I will follow up on the patient

Me: How safe do you think CAMs and IMs are?

Dr: I think all the CAMs and IMs you mentioned are safe

Me: In your work place have you seen any type of patients awareness toward CAM or IM?

Dr: No never

Me: Have you ever heard about the NCCAM?

Dr: No I've never

**Interview Eight(1.8): 150914_010**

Me: How old are you?

Dr: 48 years old

Me: Nationality and religion?

Dr: Egyptian, Muslim

Me: How long have you been practicing medicine?

Dr: 20 years

Me: Have you worked in other cities or other hospitals?

Dr: I've practiced in so many places (Cairo, out side of Cairo, Jizan in Saudi 3 years and now Makkah 5 years)

Me: Have you worked private?

Dr: No

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes a lot and I've seen a lot of successful stories Exorcism included

Me: How often do you see patients using CAMs or IMs?

Dr: I would say not more than 5% of patients

Me: What do you think about CAMs and IMs?

Dr: I believe in IMs completely and I've seen the good results of them, especially us as Pulmonologist we see people getting better after Ruqya

Me: Have you ever used CAMs or IMs?

Dr: I used it but I do not want to talk more about it.

Me: Have you ever encountered a patient that left biomedicine for CAM or IM?

Dr: No I have not but I have heard about that happening.

Me: How safe do you think CAMs and IMs are?

Dr: It depends on the treatments Hijamah is safe but it could be unsafe if there was infection, so if there were more studies about it and it was practiced in a suitable place then yes it would be safe.

Me: What do you feel about integration?

Dr: I think it is a good idea and I wish that happens, but I wish they would do more studies before integration and students can study these practices and specialise in them

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: yes I would

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: Maybe but I do not remember

Me: Have you ever heard about the NCCAM?

Dr: No I've never

**Interview Nine(1.9): 150914_011**

Me: How old are you?

Dr: 34 years old

Me: Nationality and religion?

Dr: Egyptian, Muslim

Me: How long have you been practicing medicine?

Dr: 12 years

Me: Have you worked in other cities or other hospitals?

Dr: I've worked in Mansoura, Banha, Abasyia then I came here to Makkah 4 years.

Me: Have you worked private?

Dr: In Egypt only but not in Makkah.

Me: Have you encountered patients using CAMs or IMs?

Dr: Here yes but not many maybe 3 patients. They were old males 2 of them doing Acupuncture and one Hijamah

Me: What do you think about CAMs and IMs?

Dr: they are ok but part of it is playing with people's emotions, like treating diabetes in 40 days everything is in Allah's hands but these kind of practices are wrong, but there is scientific evidence that Hijamah works

Me: Have you ever encountered a patient that left biomedicine for CAM or IM?

Dr: I saw a doctor in Egypt who stopped practicing biomedicine (he was a neuro-surgeon) and he became very famous for it but I'm not convinced about his doings but maybe the hospital where he was working did not had the facilities for his speciality

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No, but the patient will either tell me or suggest a CAM or IM. I had a patient who had TB but refused to take biomedicine and told me about some tree leafs that he thought would be good, so I told him you can take them both but he said: "No, this will take long takes six months and it costs me, but the leafs will take only three weeks" I don't know what happened to him till this day if he's still a live or died.

And there was a patient who came in the hospital and had Kay preformed on him by a relative (he was surrounded by a big number of relatives) in the hospital I tried to interfere but I was told to mind my own business so I did.

Me: What do you feel about integration?

Dr: I don't think it's good.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Laughs, No

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: I've never seen any official leaflets but I saw some made by practitioners.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

## Riyadh(2)

**Interview Ten(2.1): 150929_001**

Me: How old are you?

Dr: 26 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 1 year and a half.

Me: Have you worked in other cities or other hospitals?

Dr: I've worked in Jeddah before Riyadh.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, a limited number

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Only family

Me: What do you think about CAMs and IMs?

Dr: It can get a good outcome but the problem they are not evidence based

Me: Have you ever used CAMs or IMs?

Dr: I have not, but in the university we had a module called Complementary Medicine and they asked us to pick a CAM practice and research it and I picked Homeopathy and I've met with a doctor who practices homeopathy and has patients in Riyadh and I also met some of his patients

Me: Can you describe patients who use CAMs and IMs?

Dr: 30-40 years old middle class

Me: How do you feel about integration?

Dr: I do not think it is a good idea because it is not evidence based and there is no publications about it.

Me: Have you ever discussed CAMs or IMs with your colleagues?

Dr: Yes, I have.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe, we had an incident a few days a go I can't blame the practitioner but there were wrong indications.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: No I wouldn't

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: yes, I have heard about it.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

**Interview Eleven(2.2): 150929_002**

Me: How old are you?

Dr: 25 years old

Me: Nationality and religion?

Dr: Saudi, Muslim (Sunny)

Me: How long have you been practicing medicine?

Dr: 7 years studying and practicing.

Me: Have you worked in other cities or other hospitals?

Dr: I've worked in another hospital but not another city.

Me: Have you worked in private?

Dr: Yes I have.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, A lot of patients. I would half of them would use it especially IMs.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No, but sometimes the patient would inform me about it.

Me: What do you think about CAMs and IMs?

Dr: I think it part of the medicine we are practicing, and I am with integration and these practices need to be considered. Countries like China and India have hospitals for CAMs, mixing CAMs with biomedicine.

Me: Have you ever used CAMs or IMs?

Dr: Yes, I have.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: yes, I have seen.

Me: How do you feel about integration?

Dr: I think it's a good dissension to be made.

Me: Have you ever discussed CAMs or IMs with your colleagues?

Dr: rarely, not all of doctors would consider CAMs or IMs.

Me: How safe do you think CAMs and IMs are?

Dr: Currently, not safe. CAMs and IMs are being practiced but in the wrong way, so they get integrated then I think it would be safe.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No, but some doctors would inform the patient of the side effects of using a certain medicine with CAMs or IMs.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

**Interview Twelve(2.3): 150929_004**

Me: How old are you?

Dr: 31 years old

Me: Nationality and religion?

Dr: Saudi, Muslim (Sunny)

Me: How long have you been practicing medicine?

Dr: 6 years.

Me: Have you worked in other cities or other hospitals?

Dr: I've worked in another hospital but not another city.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, A lot of patients. At least 50%

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes, most of the time I do ask.

Me: What do you think about CAMs and IMs?

Dr: Depends on the practice, some are good and can help along side biomedicine but there's also some wrong practices.

Me: Have you ever used CAMs or IMs?

Dr: No, maybe just herbal medicine.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: yes, I have seen.

Me: Can you prescribe patients using CAMs or IMs?

Dr: usually older patients 40 and above, low economic class.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: maybe I don't remember.

Me: How safe do you think CAMs and IMs are?

Dr: Depends on the practice, some are safe and some are not. They need regulation

Me: Have you ever discussed CAMs or IMs with your colleagues?

Dr: No, but with family and friends I've been asked a lot.

Me: How do you feel about integration?

Dr: I think it would be a good move forward and practices will be more controlled.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: If it was controlled and there was a clear collaboration and communication then yes

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

**Interview Thirteen(2.4): 150929_005**

Me: How old are you?

Appendix

Dr:  32 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 9 years.

Me: Have you worked in other cities or other hospitals?

Dr: I've worked in 2 other hospitals but only in Riyadh.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, Not a lot.

Me: What do you think about CAMs and IMs?

Dr: They exist and IMs are mentioned in the holy Quran, so it's proven. Besides biomedicine originated from CAM practices and herbal medicine. For CAMs I think their effects are momentary and do not last, but for IMs they are mentioned in Quran and there for I believe in them.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes.

Me: Have you ever used CAMs or IMs?

Dr: Yes, IMs.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: I have heard that some patients are welling but I don't know.

Me: Can you prescribe patients using CAMs or IMs?

Dr: usually older patients, middle to lower economic class.

Me: How safe do you think CAMs and IMs are?

Dr: Depends on the practitioner's experience.

Me: How do you feel about integration?

Dr: I think it's a good idea and it can prevent fraud practices

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes, but after they are transferred to a psychologist and he/she decides the patients doesn't has a psychological problem then yes.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

Appendix

**Interview Fourteen(2.5): 150929_006**

Me: How old are you?

Dr: 31 years old

Me: Nationality and religion?

Dr: Yamani, Muslim

Me: How long have you been practicing medicine?

Dr: 9 years.

Me: Have you worked in other cities or other hospitals?

Dr: The same city but I've worked in a private hospital for 2 years.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, almost 30%.

Me: What do you think about CAMs and IMs?

Dr: When there are no results of using biomedicine the patient can use IMs, but only if he tried and visited more than one PHC and more than a doctor and there were no results then the patient can use IMs especially Ruqya.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No, but I might if the patient tried biomedicine and failed, I remember I had a patient who tried biomedicine here and abroad so I asked him: "have you tried IMs?".

Me: Have you ever used CAMs or IMs?

Dr: Yes, Especially Ruqya.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No, I have not.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Middle to low class and 30 and above.

Me: How do you feel about integration?

Dr: I think it's a good idea because practitioners here do not know the basics of medicine .e.g. Hijama, the practitioner could do Hijama for a patient who suffers from Anemia, and that can harm the patient.

Me: How safe do you think CAMs and IMs are?

Dr: Safe if integrated.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes, but only when biomedicine doesn't work.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never

**Interview Fifteen(2.6): 150929_007**

Me: How old are you?

Dr: 29 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 7 years.

Me: Have you worked in other cities or other hospitals?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, more than 30%.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Only patients I have a personal relationship with but I've never asked my patients.

Me: What do you think about CAMs and IMs?

Dr: Depends, if it was supervised by a doctor that would be fine but I wouldn't recommend it otherwise, there are a lot of incidents where patients were harmed.

Me: Have you ever used CAMs or IMs?

Dr: No.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes, but they got back to biomedicine.

Me: Can you prescribe patients using CAMs or IMs?

Dr: different classes and age groups and most of them psychotic patients.

Me: How do you feel about integration?

Dr: I think it's a good idea.

Me: How safe do you think CAMs and IMs are?

Dr: Depends on the practice for example, I've seen a patient suffering from Psoriasis and he went to a practitioner and he gave him an ointment and he was poisoned. I believe practitioners need to work here with us so we can cooperate with.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes, like Acupuncture and treating using Quran.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: Unfortunately, No.

Me: Have you ever heard about the NCCAM?

Dr: No.

**Interview Sixteen(2.7): 150929_008**

Me: How old are you?

Dr: 25 years old

Me: Nationality and religion?

Dr: American, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: 2 different cities( Riyadh and Jeddah).

Me: Have you worked in private?

Dr: for 3 months.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, almost 2%.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No.

Me: What do you think about CAMs and IMs?

Dr: I think it works.

Me: Have you ever used CAMs or IMs?

Dr: Yes, traditional medicine.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes, he was diabetic and he did not want to amputate his foot, so he was putting herbs over his infected wound but he got amputated.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Fifties, sixties and seventies and different classes, educated and un educated it depends on their believes.

Me: How do you feel about integration?

Dr: As a research but not as a procedure.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: If the practitioner knows what he's doing I think it's safe.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: That would be crazy, I would never.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never.

**Interview Seventeen(2.8): 150929_009**

Me: How old are you?

Dr: 28 years old

Me: Nationality and religion?

Dr: Syrian, Muslim

Me: How long have you been practicing medicine?

Dr: 2 years.

Me: Have you worked in other cities or other hospitals?

Dr: Riyadh in two hospitals.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, a lot every patient would tell his doctor but it is common

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes. I had a child patient who had cancer and his family refused chemotherapy and they depending on KAY and he passed away

Me: What do you think about CAMs and IMs?

Dr: I think its good but it shouldn't be the only path. Patients can use it as a complementary medicine with biomedicine.

Me: Have you ever used CAMs or IMs?

Dr: Yes, if it was scientifically proven, like lemon and honey for a sore throat.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Older uneducated patients.

Me: How safe do you think CAMs or IMs are?

Dr: It depends how it is used if it was used along side biomedicine then I think its safe.

Me: Have you encountered in your work place any awareness promotions about CAMs or IMs?

Dr: No.

Me: How do you feel about integration?

Dr: I can not generalise but if it was scientifically proven then yes why not.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would and I would discuss with them the best action to take for the patient.

Me: Have you ever heard about the NCCAM?

Dr: No, I've never.

**Interview Eighteen(2.9): 150929_010**

Me: How old are you?

Dr: 24 years old

Me: Nationality and religion?

Dr: Syrian, Muslim

Me: How long have you been practicing medicine?

Dr: 4 years.

Me: Have you worked in other cities or other hospitals?

Dr: 2 different cities( Riyadh and Qassim) in about 6 hospitals.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, almost 5-10%.

Me: Have you ever asked a patient if they use CAM or IM?

Dr:Yes.

Me: What do you think about CAMs and IMs?

Dr: I think it's good for the patient but some of the CAMs are placebo affect and some can work.

Me: Have you ever used CAMs or IMs?

Dr: No.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No but I've encountered patient who tried CAMs and IMs and when they didn't work they decided to use biomedicine.

Me: Can you prescribe patients using CAMs or IMs?

Dr: elderly and mosly non educated

Me: How do you feel about integration?

Dr: I think it is a good idea because it will be more controlled and that would reduce the risk.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: If it was through the ministry of health I think it would be safe.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: I don't think I would.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: Yes, they had a conference 2 years ago.

**Interview Nineteen(2.10): 150929_011**

Me: How old are you?

Dr: 34 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 4 years.

Me: Have you worked in other cities or other hospitals?

Dr: 2 different cities( Riyadh and Kharj) in about 2 hospitals.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, almost 2-30%, especially in ecology and end-stage- disease.

Me: Have you ever asked a patient if they use CAM or IM?

Dr:Yes.

Me: What do you think about CAMs and IMs?

Dr: I think some CAMs are just fairy tales and some really works.. I know someone who went for a few months to Makkah and came back doing well using Ruqya and Zamzam water. Ive also seen some people bring the Imam or a friend for their relatives in the hospital to practice Ruqya or sometimes they play Quran next to the patient

Me: Have you ever used CAMs or IMs?

Dr: Yes both. Massage and Cupping because I had pains in my shoulder and it worked. I also used Hijama, I used to have headaches and my friends told me to try it and it worked I have less headaches and sleep better. Also my vision got better. I even sked my friends about the results and they all recommended it but when visiting a practitioner you need to make sure that he is using clean equipment, I bought my own.

Also one of my family needed Ruqya and we had an Imam to do it, you know how much people here believes in the evil eye and its effect.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes a lot, one guy refused to amputate and wanted to try other remedies and ive seen a long people who refuse biomedicine.

Me: Can you prescribe patients using CAMs or IMs?

Dr: mostly middle and young .. middle and low class also

Me: How do you feel about integration?

Dr: I don't think it is a good idea.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: It could have some side effects if the practitioner used unsafe equipment or non clean. I think it would be great if Islamic medicine was used in oncology or terminally ill patients. It will help them with depression and it would be rewarded by Allah Almighty

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: I might but I think the patient will see the practitioner before he comes to see me, they usually start step by step and the first step is with them. Biomedicine is the last resource

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No, but usually the patient would ask if I think a practice is good or not.

Me: Have you ever heard about the NCCAM?

Dr: Yes, they had a conference 2 years ago.

**Interview twenty(2.11): 151005_003**

Me: How old are you?

Dr: 24 years old

Me: Nationality and religion?

Dr: Jordanian, Muslim

Me: How long have you been practicing medicine?

Dr: I got my medical degree then specialized in internal medicine, after that I trained for a year in brain and nerves medicine and then 4 years in psychiatry. .

Me: Have you worked in other cities or other hospitals?

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Dr:I worked in governmental and private sectors I also worked with a mental organization for refugees as a psychiatrist in refugee camps like Zaatari in Jordan.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, very often.They would go for the Imam for exorcism.

Me: Have you ever asked a patient if they use CAM or IM?

Dr:Yes.

Me: What do you think about CAMs and IMs?

Dr: Good but it doesn't solve the problem but it is good for those who don't have a prober psychiatric disorder for example there's a difference between depression as a disorder and as a depression as a feeling, if it was as a feeling as we all encounter citing Quran and other practices could help and the symptoms will go away but if it was a disorder then no that will not help.

Me: Have you ever used CAMs or IMs?

Dr: Yes, I used Ruqyah.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr:Yes about 10%.

Me: Can you prescribe patients using CAMs or IMs?

Dr: variation but mostly less educated

Me: How do you feel about integration?

Dr: I agree if it was based on both scientific and religion values, it has to be evidence based something that has been tested

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes, we talked about safety, efficacy and patients using these practices.

Me: How safe do you think CAMs and IMs are?

Dr: If it was through the ministry of health I think it would be safe.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No.

## Aseer(3)

**Interview Twenty-on(3.1)e: 151007_001**

Me: How old are you?

Dr: 29 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

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Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: No

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, a lot. Around 30%

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes, I had.

Me: What do you think about CAMs and IMs?

Dr: I agree for an extend. I support Ruqya, Hijamah, Kay but not always and massage is great. I think acupuncture has no benefit

Me: Have you ever used CAMs or IMs?

Dr: yes massage.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes more than one person.

Me: Can you prescribe patients using CAMs or IMs?

Dr: meddle age and average class.

Me: How do you feel about integration?

Dr: I think it works if there were regulations that control them

Me: Have you ever discussed CAMs or IMs with a college?

Dr: yes, we have discussed the benefits and safety.

Me: How safe do you think CAMs and IMs are?

Dr: If it was through the ministry of health I think it would be safe.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No.

**Interview Twenty-Two(3.2): 151007_003 (female)**

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Me: How old are you?

Dr: 25 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 2 years.

Me: Have you worked in other cities or other hospitals?

Dr: I worked in several hospitals in Aseer.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, maybe 50% of patients use IMs but less with CAMs

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes, I had.

Me: What do you think about CAMs and IMs?

Dr: I trust IMs completely and if the patient told me that Ruqya worked for them I would encourage them to keep on practicing but if she/he had wrong beliefs I would correct them like if she/he beliefs that evil eye causes their problems I would make sure to let them understand that not everything is caused be evil eye.

Me: Have you ever used CAMs or IMs?

Dr: yes IMs like Ruqya but never used CAMs.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes especially people with psychiatric problems, they're usually not convinced they have a psychiatric issue so they would leave biomedicine no matter how hard you will try to talk them or their families out of it and they would visit Imams for IM practices.

Me: How do you feel about integration?

Dr: why not integrate, I have some patients that would bring herbs or ask about practices so why not exploring and study it more.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No, but I attended some conferences about CAM practices.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe because of the way people practice it and believe in it and they would visit a healer before even considering biomedicine sometimes.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: Rarely, even the doctor sometimes would have no idea about some practices like hypnotherapy so they can not offer advice.

Me: Have you ever heard about the NCCAM?

Dr: No.

**Interview Twenty-Three(3.3): 151007_004 (female)**

Me: How old are you?

Dr: 30 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: one year in a hospital and the rest in primary health care.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, I think 99% of patients use it especially people around me but less with CAMs

Me: Have you ever asked a patient if they use CAM or IM?

Dr: The patient would usually mention it as soon as I see them especially Ruqya.

Me: What do you think about CAMs and IMs?

Dr: I think it helps besides biomedicine, even us doctors should integrate it withen our treatment plan.

Me: Have you ever used CAMs or IMs?

Dr: yes I had.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes a lot.

Me: Can you prescribe patients using CAMs or IMs?

Dr: people in their fifties or sixties they believe in completely.

Me: How do you feel about integration?

Dr: Some practices needs to be within the supervision of the ministry of health like Acupuncture and Hijamah.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: Most practices are safe but some are not like IMs I think they are mostly safe but Hijamah needs guidelines.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No.

**Interview Twenty-Fou(3.4)r: 151007_005 (female)**

Me: How old are you?

Dr: 29 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: No.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, especially in this region the numbers that use IMs are very high almost 60% but CAMs maybe 20%

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes I always ask my patients about it.

Me: What do you think about CAMs and IMs?

Dr: This field is vague for me some practices are clear like Ruqya, Hijama and I read about Acupuncture which I think it helps with pain management. There are different practices that works but because of my studies and my work nature I'm not interested in.

Me: Have you ever used CAMs or IMs?

Dr: yes I had. Ruqya and Acupuncture.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No but they use both.

Me: Can you prescribe patients using CAMs or IMs?

Dr: 45 and above of age, educated and non educated but more females than males. They reach a point in their treatment when they start looking for another path.

Me: How do you feel about integration?

Dr: I hope that will happen, I've seen a lot of wrong practices I wish we could be more informed as doctors so we can help patients.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes but un-complete discussions in the light of specialists' absence.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe now but I would advice my patients to look for a good practitioner where ever that could be.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes if I think they need it.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: Yes I have heard

**Interview Twenty-Five(3.5): 151007_007**

Me: How old are you?

Dr: 28 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 5 years.

Me: Have you worked in other cities or other hospitals?

Dr: Aseer but different hospitals.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, because they are wide spread in our community but some patients would hide it.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes of course.

Me: What do you think about CAMs and IMs?

Dr: This is big topic and Im not sure where to begin but I think these practices need a lot of research like yours but in general there are countries that adapted CAMs and treat it as an equal to biomedicine.

Me: Have you ever used CAMs or IMs?

Dr: yes but not much.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: yes but it has reasons for that, it could be that the doctor failed to communicate with the patient or the patient could come from an ignorant background that believes in that or it could be that the practices worked for the patient where biomedicine did not but I think it is mostly a psychiatric issue.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Older people and some are really high educated but they have usually done some research about it.

Me: How do you feel about integration?

Dr: People are already use these practices and I think it is about time for them to be integrated.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes I had, we discuss the benefits and safety.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe now because the practitioners are not trained by professionals but the trade has been passed to them.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: I would work with them but not transfer my patient completely.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No.

**Interview Twenty-six(3.6): 151007_008**

Me: How old are you?

Dr: 28 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: Same city but in a hospital and now in PHC.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, more than 30%.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes I asked about IMs and I recommended it like Ruqya.

Me: What do you think about CAMs and IMs?

Dr: I think they are important especially IMs its part of us but it is complementary

Me: Have you ever used CAMs or IMs?

Dr: yes IMs.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No but some times they will not do the effort because they are using IMs.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Mostly females and older patients.

Me: How do you feel about integration?

Dr: I agree with the integration.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes but not much.

Me: How safe do you think CAMs and IMs are?

Dr: I cant judge, there are some dangerous practices but somewhat safe.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes if I think they need it.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No but we try to provide some IM awareness

Me: Have you ever heard about the NCCAM?

Dr: I've seen the website when I got your survey.

**Interview Twenty-Seven(3.7): 151007_009**

Me: How old are you?

Dr: 28 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: Same city but I used to work in a PHC.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes not much.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No.

Me: What do you think about CAMs and IMs?

Dr: New field but needs research even IMs.

Me: Have you ever used CAMs or IMs?

Dr: yes but not much.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No but I have heard about it.

Me: Can you prescribe patients using CAMs or IMs?

Dr: children and 40 years old and above.

Me: How do you feel about integration?

Dr: I think it is a great idea.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe now.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes if there is scientific prove that this practice would help the patient.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: I have.

**Interview Twenty-Eigh(3.8)t: 151007_010**

Me: How old are you?

Dr: 31 years old

Appendix

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 7 years.

Me: Have you worked in other cities or other hospitals?

Dr: I have worked in Abha, medina and now Aseer.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, about 30%

Me: Have you ever asked a patient if they use CAM or IM?

Dr: Yes as a part ot the patients history.

Me: What do you think about CAMs and IMs?

Dr: What is scientifically proven to help or if I think it would not harm the patient I wouldn't mind.

Me: Have you ever used CAMs or IMs?

Dr: yes I had. Ruqya and IMs in general.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Everyone use them different ages and class groups.

Me: How do you feel about integration?

Dr: Only scientifically proven CAMs should be integrated and all IMs should be regulated and practices by professionals .

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes we would discuss some side effect that we might encounter and safety of the practices.

Me: How safe do you think CAMs and IMs are?

Dr: Not safe now at all.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No.

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**Interview Twenty-Nine(3.9): 151007_011**

Me: How old are you?

Dr: 29 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 4 years.

Me: Have you worked in other cities or other hospitals?

Dr: No.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, 20-30%

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No, they would ask me.

Me: What do you think about CAMs and IMs?

Dr: If it was safe and proved to work then yes but some practices like Hijamah and Kay could have serious side effects.

Me: Have you ever used CAMs or IMs?

Dr: No.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: Yes.

Me: Can you prescribe patients using CAMs or IMs?

Dr: Older less educated people.

Me: How do you feel about integration?

Dr: If the CAM practice had no risk and proven to help. IMs are proven by Quran so there's no arguments there.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: No.

Me: How safe do you think CAMs and IMs are?

Dr: IMs are safe but CAMs I don't think so.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Yes I would and there was an Imam who used to work in the PHC that I worked in and we transferred our patients to him not officially of course.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: No.

Me: Have you ever heard about the NCCAM?

Dr: No

**Interview Thirty(3.10): 151007_012**

Me: How old are you?

Dr: 29 years old

Me: Nationality and religion?

Dr: Saudi, Muslim

Me: How long have you been practicing medicine?

Dr: 3 years.

Me: Have you worked in other cities or other hospitals?

Dr: No.

Me: Have you worked in private?

Dr: No.

Me: Have you encountered patients using CAMs or IMs?

Dr: Yes, about 50%.

Me: Have you ever asked a patient if they use CAM or IM?

Dr: No.

Me: What do you think about CAMs and IMs?

Dr: sometimes it would help but sometimes it does nothing.

Me: Have you ever used CAMs or IMs?

Dr: yes I had.

Me: Have you ever encountered a patient who left biomedicine for CAMs or IMs?

Dr: No but they use both.

Me: Can you prescribe patients using CAMs or IMs?

Dr: older people mostly.

Me: How do you feel about integration?

Dr: It depends on the practice if the practices are not evidence based then no.

Me: Have you ever discussed CAMs or IMs with a college?

Dr: Yes we would discuss our cases

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Me: How safe do you think CAMs and IMs are?

Dr: It depends on the practice.

Me: If there was someone practicing CAMs or IMs within your work place, would you transfer patients to them?

Dr: Rarely if needed.

Me: In your work place have you seen any type of patients' awareness toward CAM or IM?

Dr: Yes.

Me: Have you ever heard about the NCCAM?

Dr: Yes I have.

Appendix

# APPENDIX 3

## Stakeholder 1:

1. What is the nature of your job?
   I'm the executive manger of the National centre for complementary and alternative medicine NCCAM
2. Why were you interested in CAM?
   As a consultant in family and society medicine I've noticed that a lot of patients request some sort of practices that does not belong to biomedicine but it considered CAMs during the last 20 years. Which made me search more about it.
3. Why did the ministry of health establish the centre?
   There was a demand for CAM practices so the ministry and other governmental departments considered the need for the NCCAM. The council of ministers made its decision for the establishment of the centre to regulate CAM through defining CAM and its aims and goals
4. What goals did the centre accomplish since establishments?
   Unfortunately, the centre faces a lot of obstacles and reluctance from academics or others because CAMs are not evidence based, but the centre a long side with the Saudi commission for medical specialities; succeeded in authorizing permits for Hijama, Acupuncture massage, healthy diet and physiotherapy but the we face obstacles from people against CAMs or un professional CAM practitioners and they are supported by false media which only harm the work we do. The challenges are a lot but with patience and hard work will overcome them.
   We also had a lot of published works and done some workshops, training and promotions.
5. What do you think of the physician about CAM integrations?
   When we established the centre we have done some studies about situation analysis to measure their reaction, we found out they have lack of information about CAMs either because they were not interested or because they don't believe in it but most of them wanted to learn more about it. So we have done some workshops to introduce them to CAM and the centre. Most consultant have a negative un justified perspectives toward CAMs, it could be because they do not know anything about it.
6. Did the centre promoted CAMs through PHC or any other way?
   We have leaflets disrupted in PHC , the centres website and through social media. It depends on the physicians interest in distributing the leaflets.
7. Is there a national policy for CAMs?
   Yes the centre has a 5 year strategy and now we started the next 5 year strategy but we can not get what we want either for financial obstacles or human resources or the absence of regulations that help the centre to achieve its goal.
8. So does the policy control CAMs through every department in the MOH?
   No, the centre is only responsible for:1) authorising permits for practitioners, 2)promoting CAMs, 3)training and 4) publications and researches .
   The centre accomplished more in training and publication and research.
   In the regulating sector the centre faces obstacles
   In the promoting sector we are trying to do more through media
9. You said the centre have been facing obstacles against regulating CAM, are these obstacles from the MOH?

No,!!!!
Some people who work in the MOH or other organisation. And academics.

10. What about Islamic medicine?
We don't have an ideology yet and we need to define it first and we can work with other organizations on the definition, but we regulated Hijam (cupping) ????
And we adopted a research in IM
11. What is the centres vision for the future?
We hope that we will be able to regulate CAM even more and cooperate with the MOH and other organizations like Acupuncture is controlled by the Saudi commission for medical specialities and we need to change that. We are planning to regulate reflexology, honey and massage.
We only regulate evidence based practices ?!!!! and a lot of practices are not scientifically proven and there is a demand to regulate them and we do not approve it.
So we are looking to:
    1. give more permits and that is number one priority
    2. promoting good CAM practice
    3. more research
    4. training
    5. we are trying to push the integration with the health system either through education or regulating CAMs

## Stakeholder 2:

1. What is the nature of your job?
I'm a family medicine physician and I also work as one of the prime minister consultant in the ministry of health. I was appointed recently as part of the comity to choose a new director for the national centre for Complementary and Alternative medicine.
2. In your opinion what does the ministry of health does to regulate CAMS and IMs?
In the current time the ministry of health does not has an active role in regulating CAMs and IMs, and that is a reason for the huge chaos in CAMs and IMs practices now.
3. How safe do you think CAMs and IMs practices are in Saudi in current time?
Unfortunately, Most CAMs and IMs practices are not safe and could be even dangerous for patients.

4- What is the Ministry's future plan to organize Islamic medicine?

The Ministry seeks through the National Centre for Alternative and Complementary Medicine to develop criteria and indicators for the measurement of evidence-based alternative and supplementary medicine practices, control its spread and licensing mechanisms for practitioners in this field and the treatment centres provided for this service.

5- Is there cooperation between the Ministry of Health and the Ministry of Islamic Affairs on the subject of Islamic medicine?

As far as I know, there is no cooperation.

6- If it does not exist, is the existence of cooperation acceptable to you?

I believe that the existence of cooperation will be positive, especially in the aspect of educating the community through Friday sermons and advocacy activities. And also when choosing practitioners for the treatment of the Koran, and spiritual support for some cases, especially patients who are terminally ill.

7- What do you think of alternative, complementary and Islamic medicine?

I think it is possible to benefit from it in the treatment of some cases of non-response to treatment with modern medicine. It should be respected as therapeutic alternatives.

8- In your opinion, who is more entitled (the Ministry of Health or Islamic Affairs) to legislate Islamic medicine and why?

I believe that the Ministry of Health should be responsible for everything related to health, including Islamic medicine, and its most qualified staff to supervise and evaluate all health practices.

9- Are they getting medical and paramedical training?

As far as I know, there is no training for them.

10- Can doctors practice Islamic and complementary medicine, or do they need permission from the ministry?

The doctor is not trained or qualified to practice Islamic and complementary medicine, and must receive the necessary training and license necessary for practicing from the ministry.

11- Are there existing centers or will the Islamic and supplementary medicine under the supervision of the ministry?

There are no centers for practicing Islamic and complementary medicine under the Ministry of Health. Practitioners are currently private and privately owned.

12- What obstacles preventing integration?

There are several obstacles to this, including:

"Not to activate the role of the National Center for Alternative and complementary medicine as required, and not receive the necessary support to achieve its objectives.

"The Ministry's concern in the development of regular medical services and the continued change of strategy in this regard.

"Lack of interest in this area of training and training.

## Stakeholder 3:

1. What is the nature of your job?

I'm a consultant pediatrician and currently work as the general director of directory of hospitals in the ministry of health.

2. Do you have any personal experiences in field of complementary, alternative or Islamic medicines?

I have not used it personally but I have a son who suffers from autism and his mom has tried CAMs with him.

3. What do you think about CAMs and IMs?
   Islamic medicine that was mentioned in Quran or the Prphet's Hadith can not be denied and I believe in it but practicing IMs should be done by trusted practitioners and with some sort of medical background or training, like honey or Zamzam healing practices both treatments are mentioned in Hadith or Quran but the healing process should be regulated and looked into from a health regulator.
4. Where do you get your information about CAMs or IMs?
   To be honestly, (and I will be wearing the doctors hat now) us doctors are a bit resistance to CAMs. It could be because CAMs' researchers and practitioners have not convinced us of it so we resist it and do not even look into it.
5. How safe do you think CAMs and IMs are?
   It depends on the practitioner, like Hijama if it was done by a safe and professional practitioner then it would be safe other wise it could be so dangerous. I believe CAMs should be regulated in the correct way or I'm completely against it.
6. Do you think CAMs and Is could be integrated within the health system?
   I think it needs more time, It needs a strong foundation, workshops for health professionals to change their minds. Everything new needs studying, workshops and promoting then we can decide to integrate or not.
7. Which do you think will be easier to integrate CAMs or IMs?
   I think both are hard to integrate but who ever convince health professionals first will be able to be part of the health system.!!!
8. What obstacles preventing integration?
   I do not think there are obstacles if the subject was taken seriously and studies have been done about it, so that there are evidence based practices but in the other hand if you have not convinced health practitioners it would be impossible to force your opinion on us.
9. So in your opinion who would be most likely to disagree on the integration, doctors or stake holders?
   Defiantly, doctors cause doctor tend to go by textbooks unless they were convinced.
10. How do you think the NCCAM to improve?
    I think the center needs empowerment and to be directed by a comity not an individual director but so far I haven't seen any role for the center and this the first time someone would discuss it with me and I hope the center wouldn't isolate it self form health practitioners so we can all work together on promoting health

## Stakeholder 4:

1. What is the nature of your job?
   I'm a family medicine physician and I also work as one of the prime minister consultant in the ministry of health.
2. In your opinion what does the ministry of health does to regulate CAMS and IMs?
   The National Center for Alternative Medicine was established

And supplemental by a decision of the High Commissioner in 1429H and is directly related to the Minister of Health.

The website of the National Center for Alternative and Complementary Medicine can be reviewed for the purpose of the tasks and aims

3. How safe do you think CAMs and IMs practices are in Saudi in current time?
I think that the Islamic and complementary medicine in Saudi Arabia still needs a lot of regulation, laws and follow-up as there are many wrong practices that are done away from the necessary and safe supervision despite the efforts of the concerned parties so far:

A) National Center for Alternative and Complementary Medicine

B) The Saudi food and drug association SFDA.

4. What is the Ministry's future plan to organize Islamic medicine?
I do not know of any plans.

5. Is there cooperation between the Ministry of Health and the Ministry of
There is currently no cooperation between the Ministry of Health and the Ministry of Islamic Affairs!
Note that cooperation must be done in particular that the practices of Islamic medicine "prophetic" and complementary needs to be often linked to the correct legal evidence without exaggeration or ambiguity.

6- If it does not exist, is the existence of cooperation acceptable to you?

Yes of course

7- What do you think of alternative, complementary and Islamic medicine?

Alternative, complementary and Islamic medicine has proved its success in ancient and recent diseases. It has also become a global study in America, Europe and East Asia. It is a science of its own, but it needs more research and study and the first countries that are supposed to do so. Islamic countries and especially Saudi Arabia because of their significant influence and clear in this area, especially with the presence of a lot of Islamic heritage in this subject

8- In your opinion, who is more entitled (the Ministry of Health or Islamic Affairs) to legislate Islamic medicine and why?

Of course, the Ministry of Health is entrusted with this and is the basis because its practice must be based on evidence and medical evidence.

9- Are practitioners getting medical and paramedical training?

Currently there is no formal medical training in Saudi Arabia except for cupping practitioners only and some herbal medicine materials in pharmacy colleges, if any.

There is a standardized training for obtaining bachelor's, master's and doctorate degrees in this type of medicine in some countries, especially in China

10- Can doctors practice Islamic and complementary medicine, or do they need permission from the ministry?

The system does not allow the doctor to practice Islamic medicine or supplementary medicine although some practice it in secret, and yes need permission from the ministry and a license from the Saudi Commission for Health Specialties.

11- Are there existing centers or will the Islamic and complementary medicine?

There are no existing centers for Islamic or complementary medicine in a comprehensive manner, but some centers specializing in cupping only under the supervision of the National Center for Alternative and Supplementary Medicine at the Ministry of Health

12- What obstacles preventing integration?

The obstacles are numerous,

* The absence of specialized colleges to teach this science according to the foundations and standards sound!

* Opposed many doctors and officials in the Ministry of Education and the Ministry of Health - unfortunately - for this kind of health practice!

* Conflicts of interest sometimes!

## Stakeholder 5:

1. What is the nature of your job?
   I worked as a deputy minister in the ministry of Islamic Affairs and currently work as a consultant for the ministry and assigned to co-write an encyclopaedia in Tib Nabawy (the prophet's medicine).
2. In your opinion does the ministry of Islamic Affairs regulate IMs?

There are no clear regulations or rules as far as I know to control Islamic medicine practices but the ministry started to provide some guide lines against wrong practices. In my opinion this subject needs more consideration to prevent any misinterpretation of the real meaning of some of the Islamic practices which can lead to serious side effects.

3. How safe do you think CAMs and IMs practices are in Saudi in current time?
   It depends on the practitioner and the practice itself but I wouldn't go as far as completely safe. I would say somewhat safe.
4. What is the Ministry's future plan to organize Islamic medicine?

I do not know of any plans.

5. Is there cooperation between the Ministry of Health and the Ministry of Islamic Affairs?

There is no cooperation between them at all.

6- If it does not exist, is the existence of cooperation acceptable to you?

Yes of course, I think it is a great idea to regulate Islamic medicine cooperating with Muslim doctors.

7- What do you think of alternative, complementary and Islamic medicine?

Well practiced Islamic medicine I believe in completely, it is after all my religion therefore my belief. CAMs in the other hand if it was scientifically proven to be beneficial then Im with it other wise I would not harm myself by using it.

8- In your opinion, who is more entitled (the Ministry of Health or Islamic Affairs) to legislate Islamic medicine and why?

I think both need to cooperate and establish a committee that include doctors from both ministries to provide the best possible regulations.

9- Are Islamic practitioners getting medical and paramedical training?

No

10- Can doctors practice Islamic and complementary medicine, or do they need If they studied Islamic medicine then I don't think they can not.

11- Are there existing centers or will the Islamic and complementary medicine ?

As far as I know, no there is none.

12- What obstacles preventing integration Of IMs?

I don't think there will be many since the majority of doctors in Saudi already believe in IMs so I think they will be very supportive. The only thing missing is the plan to start and the communications between the two ministries.